

April 15, 1998

Office of Field Support: Hillman

EH ON-SITE TECHNICAL ASSISTANCE ACTIVITIES, January - March 1998

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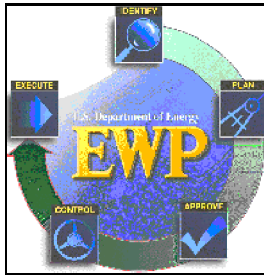
Attached is a report documenting technical assistance activities completed during the first quarter of 1998. The Offices of Worker Health and Safety and Nuclear and Facility Safety are focusing their technical assistance activities on supporting the Department's primary initiatives to improve safety and health performance in the field, with particular emphasis on Enhanced Work Planning (EWP), Radiological Protection, Chemical Safety, and Self-Assessment. The major portion of field technical assistance relates to these vital topics.

If you have any questions or comments, please call Mike Hillman at 301-903-3568 or Ed Blackwood at 301-903-0124.

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Attachment:

EH On-site Technical Assistance Activity Summary, October-December 1997



ENVIRONMENTAL, SAFETY, AND HEALTH

ON-SITE TECHNICAL ASSISTANCE

ACTIVITY SUMMARY

JANUARY THROUGH MARCH 1998

The Department of Energy's (DOE) Office of Environment, Safety, and Health (EH) On-site Technical Assistance Program continued to provide support to DOE field elements during the first quarter of 1998. The EWP programs at the participating DOE sites throughout the complex continued to make significant progress in helping implement the principles of Integrated Safety Management and improve safety, performance, and productivity. The four DOE self-assessment pilot sites also made substantial progress through increasing worker involvement, strengthening management commitment, and creating an environment that promotes continuous improvement.

The EWP Steering Committee continued to provide aggressive leadership in improving work management processes. During February, a national EWP Steering Committee meeting was convened in Albuquerque in conjunction with the Integrated Safety Management Lessons Learned Workshop. The meeting helped veteran EWP sites as well as those just getting started all share their approaches to improving the work control process through embracing the key tenets of EWP, multi disciplinary team planning, institutionalized communication, worker involvement, and graded, risk-based approach to work control. In addition, strategies were developed at Albuquerque to maximize the usefulness of EWP and incorporate, as part of the EWP strategy, methods to help sites develop their Integrated Safety Management System (ISMS) at the grassroots activity level.

One recurrent theme that organizations implementing ISM, EWP, and Self-Assessment face as they implement these improvement programs is resistance from both managers and the workforce to change. The Steering Committee

has committed to providing lessons learned from sites across the complex about what the real issues are in dealing with resistance to change. They are focused on developing tools and providing support dealing with attitudes and mindsets before and during change implementation.

EWP efforts throughout the complex continued to show dramatic successes for the Department. Examples of accomplishments during the first quarter include:

- The Enhanced Work Planning program has been formally recognized at the headquarters level as part of the strategy to help sites develop their Integrated Safety Management System (ISMS). Several steps will be taken so that ISMS programs across the Complex take full advantage of the proven EWP work control techniques and philosophies.

Discussions between DOE-Savannah River and Westinghouse Savannah River Company (WSRC) regarding the integration of EWP with ISM produced agreements that the EWP process will be documented in WSRC ISMS description's document. EWP process will be documented in the Site policy for ISMS. An ES&H programs representative will be added to the EWP Site Steering Team.

- Newly enhanced work control processes have been implemented at various sites promising to save the Department millions of dollars in costs while improving safety.

At Pantex, for example, a \$1 million cost avoidance was reported this quarter stemming from a 50% reduction in the adverse maintenance-related events that cause production down time and schedule delays.

At Fernald, another \$6.7 million cost avoidance (over five years) has been predicted through EWP team efforts that dramatically streamlined how decisions are made about property dispositioning.

At Idaho, a site-wide standardized maintenance work control process has been approved. They are conducting formalized training and will begin implementation on May 1, 1998 of the work control process. This approach applies a graded approach for work and uses common performance indicators to monitor effectiveness. The expected benefits from this standardized approach are improved safety and efficiency, greater flexibility for resource use across facilities, more effective support of matrix management and projectization, and simplified training requirements.

Brookhaven National Laboratory has agreed to a site-wide work control standard in order to gain consistency with key principles of Integrated Safety Management and EWP. The standard will institutionalize a graded approach to work planning and hazard analysis where the most rigorous efforts are directed toward the most hazardous jobs.

- Innovative tools and work products have been developed to help craft, supervisors, and managers work safely, more efficiently, and with better quality.

In Idaho, the EWP "Tools" team revised their computerized Job Requirements Checklist (JRC) to make it applicable to all INEEL organizations and facilities. The JRC, which now resides on the site's intranet, helps those responsible for controlling work determine necessary resources, planning requirements, and level of work order review.

Similarly at Oak Ridge, the East Tennessee Technology Park's Maintenance and Operations division has begun testing the computerized Work Planning and Permitting Information System (WPPIS). Key elements of WPPIS were patterned after the Idaho JRC thus reflecting the value of "cross pollination" within the EWP community. Like the Idaho JRC, WPPIS is being used as an important tool for integrating safety considerations into management and work practices in a systematic, defensible, and documented fashion.

After baselining the work planning and waste packaging processes at the Savannah River H-Canyon facility, some preliminary process improvements (cost saving) were generated. These improvements were related to the reduction or elimination of waste generation, reuse of non-contaminated materials, volume reduction/material substitution, improvement of waste separation and reduction in surface area defined by contaminated areas (CAs) and High CAs.

- Supplementing the recently completed EWP training material with existing training courses, sites have taken advantage of professionally developed curriculum and teaching aids to jump-start their EWP programs. Pantex, Oak Ridge, Rocky Flats, Brookhaven, and Idaho are among the sites that have used one or more of the three training courses developed with funding contributions from the EWP sites across the complex. Experienced training staff from DOE-Headquarters were made available to sites for this training.
- Enhanced Work Planning has focused on work management. A related area of concern is worker qualification. Several sites are examining and developing processes to more effectively and safely manage the requirements associated with personal skill sets, site specific training requirements, and medical requirements. Hanford is implementing a site-wide process developed by a EWP team that applies a risk-based approach to place employees in proper medical and training programs. To achieve this risk-based approach, information is now

compiled for each employee detailing their physical job requirements and the specific hazards to which they are exposed. The process will be further enhanced for hazards in activities that could not be anticipated. Hanford has developed an automated job hazard analysis tool that incorporates a Potential Exposure Hazards (PEH) form. This tool will be incorporated into the work planning process to identify, analyze, and control hazards associated with individual tasks. The PEH form is completed when exposures for a task are expected to exceed thresholds that could trigger a medical qualification or monitoring requirement. If the required medical qualification/monitoring and health-related training are not already in place for the workers, they will be promptly provided when identified during work planning.

Fernald is developing a model to manage the requirements associated with getting the right worker on the right job with the right tools at the right time. The Fernald pilot project will focus on the need to improve the ability of the sites to manage work by linking the information about personal skills, medical surveillance, site and task specific training, hazard surveillance and control, and tasks and associated risks. With support from EH-5 and EH-6, the EWP core team is evaluating the processes currently used at other DOE locations (Hanford, Oak Ridge, Idaho, and Rocky Flats) and will build a model that can be piloted at the Fernald facility with expectations for application at other DOE facilities.

Over 40 people gathered in Idaho Falls, Idaho to discuss results to date and lessons learned from Self-Assessment demonstration projects aimed at testing improvements in continuous improvement, and feedback and control processes at four different DOE sites. Examples of accomplishments during the first quarter include:

- The results from the feedback and control demonstration project at the Rocky Flats Environmental Technology Site to date include suggestions and observation that should result in cost avoidance of \$223,000.

- The feedback and control demonstration project at Idaho National Engineering and Environment Laboratory is producing an impressive array of tools to increase worker involvement, enhance communication, and promote continuous improvement. Examples of these tools include manager walkabouts, employee walkabouts, job observations, employee suggestions, and post job reviews.
- As a direct result of the Brookhaven National Laboratory Self Assessment Improvement Team, the National Synchrotron Light Source has experienced remarkable success by increasing employee involvement in their ES&H work space inspection process. The pace of closeout of inspection findings has progressed to the point where there are no longer any overdue findings. The ability to explain findings clearly to employees in affected work spaces has led to an improved understanding of the nature of the finding as well as a far more rapid (often immediate on-the-spot) resolution of the findings.

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ENHANCED WORK PLANNING ACTIVITIES

EWP STEERING COMMITTEE

The first quarterly National Enhanced Work Planning Steering Committee meeting was held in conjunction with the Third Integrated Safety Management Lessons Learned Workshop. One main area of focus for the Committee this quarter was the integration of EWP with other Departmental programs and initiatives (e.g., Integrated Safety management, VPP, Chem Safety, Lessons Learned, Waste Minimization). This joint meeting in Albuquerque, New Mexico on February 11-13, 1998 provided an opportunity for Committee members to share lessons learned from EWP and Self-Assessment with members of the ISM community. Both programs are working toward similar goals. For the near future, the National EWP Steering Committee will focus on achieving ISM at the activity level.

Additionally, the site EWP Steering Committees ensure the implementation of ISM principles such as: worker participation, effective hazard analysis, feedback process at the task and facility level to the program focus. Each of the site steering teams will continue to coordinate their efforts with the EWP National Committee, which EH-53 will continue to chair.

All active EWP sites participated in the meeting and updated the Steering Committee on the status of EWP. The sites also shared lessons learned on what works and what does not work in implementing and sustaining EWP. The Steering Committee identified 12 essential elements for making EWP viable at participating sites and identified actions that can be taken in FY 98 to achieve that viability.

EWP and ISM Integration

The Steering Committee is fully integrated with the ISM program. EWP is viewed as the execution strategy for direct achievement of ISM goals at the activity level. The purpose of DOE's policy on Safety Management Systems is to provide a formal organized process by which people identify, plan, control, perform, and improve the safe conduct of work. ISM came from this policy. The objective of ISM is to systematically integrate safety into management and work practices at all levels so missions are accomplished, while protecting the public, the worker, and the environment. ISM is a common-sense approach to doing work safely. This is accomplished through effective integration of safety management in all facets of work planning and execution. At the activity level EWP meets every component of the ISM protocol.

ISM creates an environment for increasing worker involvement in work planning, including hazard and environmental impact identification, analysis, and control; work execution; and the feedback and improvement process. In practicing the five key elements of EWP, the five functions of ISM are achieved.

The Steering Committee is currently integrating ISM in the EWP training and EWP as a tool to achieve ISM is being added to the ISM training. Additionally, the next version of the ISMS Guide (450.4-1), due this summer, will include guidance on using EWP to achieve ISM at the task level. EWP is identified as a project under ISM. This quarter the Committee will focus on additional avenues to integrate ISM and EWP.

Twelve Essential Elements for Sustaining Enhanced Work Planning

The EWP Steering Committee identified twelve elements that must be in place to ensure the long term viability of EWP principles. The Committee developed suggested action steps that each site should consider and adopt, for accomplishing each of the twelve elements. These steps are defined in a document titled *Twelve Essential Elements for Sustaining Enhanced Work Planning*, found on the EWP homepage. This document is intended to serve as a guide based on site-specific needs.

The first element identified was DOE Support of EWP. DOE Headquarters and Field Office line management should clearly document their expectations and support of EWP to the contractor, and hold contractors accountable for its application. Secondly, each site must have Senior Management buy-in to EWP. Senior management as well as middle management should commit and support the development and application of the EWP process and its principles. This commitment includes providing adequate resources for EWP, holding the line organization responsible for EWP performance, and approving EWP documentation. The third element identified is for line management to accept ownership of EWP. They must be accountable and hold subordinates accountable for EWP performance.

Fourthly is the need for EWP to integrate with other initiatives, particularly ISM, to more effectively use resources. The fifth element documents the need for the site EWP process to be formalized. Documentation necessary to describe how EWP principles or processes are implemented should be in place, sustaining it despite organizational and personnel changes. Such documentation may include charters, policies, goals/objectives, procedures, implementation plans, training plans, and/or validated successes. The sixth element includes the need for installation of mechanisms for incorporating worker involvement and input to the design and implementation of EWP processes. This should lead, ultimately, to cultural change and sustainability of EWP.

Next, the Committee identified a formal EWP training program as necessary for the consistent implementation of EWP processes. The training should extend to line management, supervision, workers, and the trainers themselves. The eighth element for long term viability of EWP principles was the consistent use of performance indicators as management tools to track progress, highlight successes, justify resource allocation, and communicate to worker contributions. Ninth on the essential elements list was the need for formalized EWP communication mechanisms. Various methods should be in place to communicate, both internally and externally, information regarding EWP and the successes achieved through EWP. Such methods should be used to clarify the principles of EWP, improve the level and trust within an organization using EWP, and describe the positive results of EWP.

Essential element ten on the Committee's list was the need for mechanisms for feedback, evaluation, and continuous improvement. These mechanisms should be in place for management to obtain feedback on the effectiveness of EWP processes, evaluate the results, and provide information to improve the margin of safety or efficiencies in work planning and execution as part of continuous improvement. Eleventh on the Committee's list of elements is the need for the site to commit adequate resources to support the continuation of EWP. The commitment level is dependent on site-specific needs. Finally, the Committee stressed the importance of documenting results and successes of EWP to assist in initiating and extending EWP processes, and providing a basis for justification of resources and promoting continuous improvement.

The Committee will be baselining each site next quarter relative to the status of implementing the twelve essential elements.

Lessons Learned

Part of the Committee's focus on the integration of other DOE programs and initiatives is the effort to incorporate the Lessons Learned programs into the work control process. This effort has begun

with HQ support at Oak Ridge, Savannah River, and Hanford. Each DOE employee, contractor, and subcontractor is a valuable source of knowledge, information, and learning that can be tapped to provide enormous benefits-cost savings, improved safety, greater productivity, and better results. These benefits can be multiplied across the complex if information is effectively shared and employees are committed to using the lessons learned information. The value of sharing lessons learned from the EWP efforts can help reduce and/or avoid unnecessary costs associated with new projects. The value can be further expanded by sharing best practices, innovative ways to solve problems, and emphasizing positive experiences.

The goal for EWP core team leaders is to establish communication links with their facility and/or site lessons learned coordinators and other external sources. The facility/site lessons learned coordinators have an established network with the capability of instant dissemination of positive and/or negative experiences. In addition, the lessons learned coordinators can query the network for information not readily accessible for the enhanced work project being undertaken.

Worker Qualifications Pilot at Fernald

An area of concern at Fernald, as well as other DOE sites, is the system that manages the worker qualification requirements associated with getting the right worker, on the right job, with the right tools, at the right time. Using the five key elements of Enhanced Work Planning, Fernald is conducting an analysis of its current worker qualification system to determine where opportunities exist for improvement. Fernald will focus on the need to improve the ability to manage worker qualification by linking information about personal skills, medical surveillance, site and task specific training, and hazard surveillance and control.

With support from EH-5 and EH-6, Fernald's EWP core team is evaluating the automated tools being developed or used at Hanford, Idaho, and Rocky Flats. Currently, Fernald is working closely with

Hanford personnel to apply lessons learned from the Hanford process which applies a risk-based approach to place employees in proper medical and training programs. This evaluation will help determine if these processes have applicability to Fernald's enhanced worker qualification system.

For the purpose of worker qualification, the core team has identified three types of workers at Fernald: salary, service subcontract, and represented employees. Fernald currently uses a unique process to hire, maintain, or terminate each of the three types of workers.

Each of the three primary areas (hire, maintain, terminate) will be baselined for each of the three types of workers (salary, wage, subcontractor). The 'hire' area baselines have been completed. Once baselined, the same elements will be evaluated to determine if enhancements are needed. Enhancements may include the use of existing automation tools (mentioned above) and/or less technical solutions such as new or revised written procedures.

After Fernald completes the baseline of the worker qualifications process and benchmarks relevant processes at other DOE sites, they will build a model that can be piloted at the Fernald facility with expectations for application at other DOE facilities.

Promoting Cultural Change Necessary for Genuine EWP/ISM Implementation

One recurrent theme that each organization and facility site faces as they implement improvement programs such as EWP, Self-Assessment, and ISM is resistance of managers and workforce to change. The Steering Committee has committed to providing lessons learned from sites across the complex about what the real issues are in dealing with resistance to change. The focus is on developing tools and providing support dealing with attitudes and mindsets before and during change implementation.

Employee involvement is a powerful tool not only for the actual improvement process, but also, for doing what it takes to bring the changes into reality. EWP and Self-assessment programs have continually validated the fact that the only solutions that really work are those that workers and management discover/recognize themselves. The goal of this support will focus on:

- Clarifying why traditional efforts at change do not work.
- Sharing lessons learned to provide an understanding of the real issues of resistance to change.
- Developing an effective approach to a change-friendly climate.
- Developing a framework for generating a continuous improvement mindset (which is the key to ongoing organizational renewal).
- Developing a key leadership tool for change solutions that will work at an individual site.

The way to create real and lasting change in this environment of changing missions, decreasing funding levels, and reorganization is to deal with the issue of attitudes and mindsets first, or at least concurrently, then with the system changes. Unleashing and focusing the energy of people first, prepares them to support, rather than resist the changes.

BROOKHAVEN

During the first quarter of 1998, the EWP program at Brookhaven National Laboratory continued to focus on enhancing the work control system across the site to meet the expectations of

Integrated Safety Management as outlined in an EH evaluation report of April 1997. In January, several presentations were given to upper management on the proposed Work Planning & Control Standard to familiarize them on the key features of the standard which are:

- The graded approach to analyze and screen jobs into low, moderate, and high hazard categories;
- The skill of the craft concept for low hazard work to minimize paperwork;
- Multi-discipline team reviews of the moderate and high hazard work requests;
- Criteria provided for the hazard analysis and graded approach;
- A directorate level manager required to "champion" the program and drive line management ownership;
- Worker feedback through the Self-Assessment Program; and
- Established common requirements and a generic form for a site-wide work permit.

Following upper management's concurrence on these key features, a draft of the Work Planning and Control Standard was sent out for a site-wide review by key department managers, building managers, and ES&H Coordinators. To educate the personnel reviewing the work control draft, six training sessions were given around the site to present the standard, explain the ISM/EWP principles driving it, and address questions and concerns. The standard was revised to incorporate minor clarifications to the text and to incorporate additional environmental and safety concerns on the ES&H analysis section of the work permit. The Work Planning and Control Standard was ready at the end of March for management to issue in the ES&H Manual. Each

department will be required to write a departmental procedure to come into compliance with the key features of the standard and modify their systems accordingly. All departments must be in compliance with the standard by July 30.

The first phase of the EWP program was agreeing on a common Work Control Standard, and publishing it with upper management's concurrence. The program is now into the second phase where demonstration pilots were initiated to "test out" the standard. Pilot programs were started in the National Synchrotron Light Source (NSLS) Department in February and in the Relativistic Heavy Ion Collider (RHIC) Department in late March. The initial emphasis in both departments is setting up the system for screening the flow of work so that the increased rigor of planning and hazard analysis can be directed to the moderate and high hazard jobs. Work requests at NSLS flow through one of five supervisors designated to do the initial work screening. For the jobs not screened out as low hazard skill of the craft, the supervisor notifies the work provider that a work permit is required for that job. The supervisor will assemble a team to walkdown the job and/or have a review meeting to conduct the hazard analysis, the coordination work, and the job plan. The size of the team depends on the complexity and scope of the work.

The work permit form was specifically designed as a one page form, front and back, for convenience and to overcome the natural field reaction to multi-page forms. Any checkoffs on the hazard analysis, waste management, environmental, or work control sections drive attachments to the form from already existing procedures and permits. The work permit form and content have been received rather well. Tracking the flow of the permit paperwork, however, has been a problem at times. BNL does not have a convenient software system site-wide to electronically route the permit, so RHIC is considering programming it onto the web for easy access and control.

An EWP Pilot was initiated between the AGS and Plant Engineering Departments to emphasize the scheduling and coordination aspect of the Work Control Standard. The scheduling pilot is to

address the feedback from the maintenance workers that it frequently takes too long to track down the correct people for signatures on various permits and authorization forms. The first scheduling meeting was held in late March with a multi-discipline team to achieve better coordination, improve the hazard analysis, and fill out the required AGS forms more quickly. The progress of this EWP scheduling pilot will be tracked for commitment by both departments for improving efficiencies.

IDAHO

The Idaho Operations Office (ID) and its management and operating contractor continue to expand Enhanced Work Planning (EWP) across the INEEL site. The enhanced work control process that originally was applied to one Nuclear Operations facility (the Idaho Chemical Processing Plant-ICPP) has been used as the model for revising the work control system for other INEEL facilities and organizations. The goals of the standardized site-wide work control system are to increase worker involvement, improve worker productivity, achieve better safety, quality, environment, and health planning input, and improve cost effectiveness.

To assist in expanding EWP to all site facilities, the M&O contractor established the INEEL EWP Directorate Steering Committee to provide direction and oversight for EWP implementation. The EWP Team project manager, supported by a site-wide working team and sub-teams with representatives from all facilities and major organizational functions, meets bi-weekly to report progress and obtain advice and direction from the Steering Committee.

The EWP Working Team received approval to standardize the work control process at all site facilities and organizations. The expected benefits from this standardized approach are improved

safety, efficiency, greater flexibility for resource use across facilities, more effective support of matrix management projectization, and simplified training requirements.

The EWP-detailed work package defined the scope and schedule for standardizing the INEEL work control process. The overall project goal is to complete the development and implementation of a site-wide standardized process for maintenance work control. The goals are to use a graded approach for work and use common performance indicators to monitor effectiveness. Each work order has an identified primary owner from the time the requested work is accepted through the completion and closeout of the work. The elements of the standardized work control system include: a single site-wide work control process and procedure with identical work control forms; common terminology, roles, and responsibilities for work control participants; one site priority rating system; a common hazard identification tool; and standardized hazard identification practices.

The work package also defined the organization for site-wide EWP, including Working Team and Sub-team membership, required resource commitment, and deliverables. Multi-organizational EWP teams established to accomplish this scope of work include the EWP Process Flow/ Procedure Team, the Tools Team, the Engineering Team, the Priority Rating System Team, the Hazard Mitigation Team, and the EWP Working Team. The EWP teams developed the standardized method for planning, controlling and closing-out work orders in the work control process. This revised work control system uses a standardized graded approach based on the risks and complexity of proposed work and involves crafts, supervision, and ESH&Q support in job planning and oversight.

The planned implementation date for the new work control system is April 30, 1998. This revised work control process is supported by a common site-wide Computerized Maintenance Management System (CCMS) to manage work orders, maintain equipment history, and interface with engineering activities. The CCMS is being implemented in a phased approach in fiscal 1998

with the first facility (CPP) beginning to use the system in January 1998.

Status of Activities

The most significant accomplishments in this reporting period were: 1) completion and approval of the revised site-wide maintenance work control procedure; 2) development of the Job Requirement Checklist tool to clarify the applicability and specific information in the tool, 3) completion and approval of site-wide procedures for standardizing engineering activities 4) completion of training video and classroom training on the new work control system and 5) revision of site-wide procedure for safety analysis clarifying the hazard evaluation and mitigation process.

Revised Site-wide Maintenance Work Control Procedure

The INEEL site-wide maintenance work control procedure was completed and approved through the formal LMITCO company review process. This procedure provides the administrative work control process that ensures that maintenance tasks are properly requested, authorized, planned, reviewed, performed, and closed in a safe and efficient manner. Clear roles and responsibilities for personnel involved in the work control process are defined. The procedure applies a graded approach to determine the degree of rigor, detail, and level of formality required. Minor maintenance which meets specific criteria, can be performed using skill of the craft without a written work order; work not meeting minor maintenance criteria requires a written work order. Specific criteria are established for written work orders to ensure that hazard identification for highly complex, high risk jobs is performed in a consistent, rigorous method using the Job Requirements Checklist.

Upgrade of the Job Requirements Checklist

The EWP Tools team revised the Job Requirements Checklist (JRC) to make it applicable to all INEEL organizations and facilities. The JRC computerized tool, which resides on the INEEL Intranet, assists the primary owner or planner in determining resources and planning requirements, and level of review for work orders. The EWP Process Team established a graded approach for the primary owner to determine when the revised Job Requirements Checklist needs to be used. By implementing the JRC at all INEEL facilities based on seven screening questions, a site-wide consistent approach for determining the rigor of hazard evaluation and mitigation, and quality and environmental review is achieved.

The revised JRC has logic that keeps the primary owner from answering non-applicable questions for site-specific areas, and identifies how and when team planning should be done. It provides links to other LMITCO Intranet-based documents and homepages to assist the user in answering questions. It also identifies required planning for mitigation of hazards, and identifies when additional work control documents or permits are required. The JRC is linked to a work request screen that any employee can complete on the Intranet and forward electronically to the appropriate work control center.

The EWP Team recognized team planning by individuals have value to add in planning a work package for some types of activities. The work control procedure triggers the need for team planning based on the complexity and risk of the job. Involving workers on the work planning team is an effective means of using worker experience for identifying work hazards, improving work efficiency, and eliminating unnecessary requirements. Worker involvement during planning activities, including walking down the job at the work location, is effective since these employees are most knowledgeable of the work, know the equipment, and understand job hazards in performing work. Additionally, team review and approval is more timely since interactive team discussions can be more effective in identifying and resolving issues.

Site-wide Procedure for Standardized Engineering Activities

The EWP Engineering team clarified engineering practices and the interface with work control and planning process. They have developed a standardized INEEL protocol, terminology, and the flow process for engineering activities. This multifunctional team included representatives from all major INEEL organizations. The scope of this effort included evaluating engineering practices, functional roles and responsibilities, equipment ownership, project authorization, planning, work performance, and job close-out.

The EWP Engineering Team developed the following deliverables in support of the revised work control process: 1) standardized engineering control interfaces incorporated in site-wide work control process, 2) a site-wide Facility Change Form and procedure, 3) a standardized Engineering checklist, 4) an Engineering Design Files procedure for documenting engineering and technical information, and 5) training to implement the changes. These deliverables will be completed to support implementation of the standardized work control process on April 30, 1998.

During this reporting period, the EWP Engineering Team completed the revision to the company-wide procedure for the engineering change process and engineering planning and implementation matrix (engineering checklist). The engineering change process procedure provides instructions for applying a graded approach to uniformly manage and perform engineering changes at LMITCO facilities. It integrates requirements for configuration change control, design input document preparation, and design verification into one procedure. The engineering planning and implementation matrix is a subject matter trigger to be used for the designing or engineering of a project. It is a tool to assist in defining the design inputs, methods, outputs, and verifications (including references) for a project.

The Engineering Team also incorporated changes to the work control procedure to standardize and

integrate engineering activities and practices with work control and work planning. The team applied the EWP principles of early worker involvement, team reviews, and graded approach to engineering functions and the engineering interface with the work control process.

The Engineering Team completed a draft procedure for Engineering Design Files to provide a flexible, standardized site-wide format for documenting technical studies, investigations, engineering analyses, design notes, comments, vendor literature, performance curves, and other engineering data. The engineering design files will be maintained and stored by the program/facility document control organization.

EWP Implementation Training Development

Development of the EWP 1998 Implementation Training has been completed and performance of the training has begun. The overall training strategy developed by the EWP Training Team is to conduct four specific levels of training. Level 1 Training, an orientation of the new work control process for all INEEL employees, delivered through a simple brochure is complete. Information provided in the brochure includes listings of the site Work Control Centers and points of contact for work control and means for any employee to request services including hard copy, an electronic form from the INEEL intranet, and contact phone numbers.

Level 2 Training, a more comprehensive overview of the standardized maintenance work control process for responsible managers, supervisors, crafts, operations, applicable engineering groups, planners and ESH & Q personnel. Level 2 Training, entitled Overview Training, is a 13.5-minute video. It has been completed and presented to approximately 1,200 employees during their scheduled safety/staff meetings.

Level 3 Training, a 3-hour classroom training for those individuals directly responsible for executing maintenance work orders. This training is given to an audience of about 400 employees by a facility trainer and the EWP facility point of contact. The

EWP team developed a practical exercise with five real-life maintenance scenarios for hands-on use by the personnel taking the training. The employees simulate processing and completion of work activities for the purpose of clarifying and discussing functional roles and responsibilities and to illustrate decisions and communications required to process work requests using the Standardized INEEL Maintenance Work Control Process and logic.

Level 4 Training will cover specific activities and details within the work control arena. This training will be for primary work order owners (system engineers) and planners. Specific classroom training includes Computerized Maintenance Management System (CMMS) operation, JRC usage, Engineering process, and Skill of the Craft.

Maintenance Performance Measures

Maintenance Excellence is, "Safely meeting customer needs in a timely manner and at a cost competitive rate to ensure reliability of equipment and structures commensurate with INEEL missions."

The four key quality objectives associated with Maintenance Excellence include:

- Safe execution of work
- Cost efficiency of maintenance activities
- Responsiveness in performing maintenance activities
- Reliability and availability of SSC's (Systems, Structures, Components)

Performance measures and performance indicators have been developed and promulgated for site-wide implementation. These indicators provide a standardized tool to baseline current maintenance performance and to measure improvements achieved through site-wide EWP enhancements. Full implementation of these

indicators and management reports is expected to be completed early next quarter.

Maintenance Optimization

Training on preventative maintenance optimization principles was delivered to maintenance personnel representing the major INEEL facilities last year. A well-known subcontractor possessing highly regarded credentials and experience in the area of preventative maintenance optimization principles performed the training. Following the training, these principles were piloted and resulted in maintenance cost savings due to a technically justified reduction in maintenance requirements. Expansion of maintenance optimization to other INEEL areas is progressing.

Follow-On Actions

On-going efforts focus on maintenance optimization, and enhancing use of performance indicators to monitor the effectiveness of the work control system, and to encourage worker involvement in identifying process improvements. The EWP project has been strongly endorsed and supported by LMITCO senior management. The EWP project manager plans to evaluate applicability and recommend to senior management the expansion of EWP principles to environmental compliance, facility operations, and projects and construction.

OAK RIDGE

During the first quarter 1998, EWP activities at the Oak Ridge Reservation continued to expand and improve work control processes and safety. The Oak Ridge-wide EWP Steering Committee is now actively directing the technical mission of the program based on the finalized charter and is consistently participating in all national EWP forums. Three key objectives were accomplished

during the first quarter: 1) solidifying the relationship between EWP and the Integrated Safety Management efforts at the Oak Ridge Operations level; 2) obtaining the endorsement of the new M&I contractor, Bechtel-Jacobs, and their commitment to continue to use EWP and the enhanced work control processes developed over the last year; and 3) initiating the first EWP project at ORNL.

In addition, EWP teams continued to contribute to a safer, faster, less costly way of doing business at the Y-12 plant and the East Tennessee Technology Park (ETTP). Specifically, the Work Planning and Permitting System (WPPIS) was formally introduced into the work control system at ETTP. It is currently being used by managers, planners, supervisors, craft and subject matter experts at the site. At the Y-12 Plant, EWP efforts have helped revise the Facilities Management Organization's (FMO) *Planners Guide*, as well as plantwide procedures which enhance how hazard identification processes are to be utilized up-front in the job initiation process.

EH Technical Assistance during the first quarter has continued to help the Oak Ridge organizations set up various EWP initiatives and establish EWP core teams to baseline work control processes, identify opportunities for enhancements and implement beneficial changes. In particular, mentor support has focused on participating on the Steering Committee, expanding the EWP program, highlighting successes, and developing draft guidance documents and action plans related to such matters as showcasing how different organizations are incorporating the principles of EWP and ISM into their work control systems. EH Technical Assistance also helped Oak Ridge EWP leaders prepare for and participate in the February Albuquerque ISM/EWP conference. Also, two one-day EWP implementation training classes were held at Oak Ridge for planners, craft and managers along with several seminars on performance indicators.

Integrated Safety Management and EWP

During first quarter 1998, a strategic alliance was solidified between ISM and EWP efforts. EWP has become recognized as a means to advance ISM principles at the activity level, and efforts at Oak Ridge are currently being coordinated accordingly. A Department of Energy, Oak Ridge Operations official is now serving as a full Oak Ridge EWP Steering Committee member.

At ETTP, the usefulness of EWP as a way to implement fundamental aspects of their ISM system has been recognized for some time. As a result, the Work Planning and Permitting System (WPPIS), developed by EWP teams, is clearly recognized as a means to help integrate safety considerations into management and work practices in a systematic, defensible and documented fashion. The system is proving invaluable as a tool for identifying safety standards and requirements and tailoring hazard controls to the specific work being performed--key guiding principles of ISM. In early March, the ETTP Maintenance and Operations Divisions fully switched to WPPIS for the planning of all work as part of a 60 day beta testing and review process. During this period, debugging of the system will be accomplished under actual field conditions. Input will also be requested from the system users on ways to further streamline the system without compromising safety. Other ETTP divisions are also being encouraged to use the system during this period. Also, EWP participants from other sites at Oak Ridge are assessing WPPIS for their own needs and are monitoring the system's implementation at ETTP. For example, the Y-12 hazard identification EWP subteam recently completed a formal review of the system and recommended that WPPIS be strongly considered as a tool to advance ISM at their site, as well. Use of WPPIS at both ETTP and Y-12 would dramatically improve the consistency of hazard identification and work control processes at two of the three sites at the Oak Ridge Reservation.

New M&I Contractor Embraces EWP

The EWP efforts at Oak Ridge have expanded to include members of the new Managing and Integrating (M&I) contractor at ETTP, Bechtel Jacobs Company. While Bechtel Jacobs is scheduled to assume full M&I responsibilities

starting in the second quarter, management has already endorsed EWP efforts and committed to keep the work control processes developed over the last year by EWP teams. Bechtel Jacobs personnel have begun to attend the regular ETTP EWP core team meetings and are participating on the Reservation-wide EWP steering committee.

Over the last three months, Bechtel Jacobs received two demonstrations of WPPIS, the cornerstone of the ETTP enhanced work control system. Bechtel Jacobs gave the system rave reviews and expressed the desire to adopt WPPIS as the work control system to be used by everyone performing work on-site, including the many subcontractors to be brought in per their M&I objectives. Also, ideas were discussed to further enhance the system to include tie-ins to the purchasing and engineering groups at ETTP.

ORNL Launches First EWP Initiative

During the first quarter, ORNL's Plant and Equipment (P&E) Division launched a project aimed at enhancing their work management practices based on the principles of EWP. The main goal of the initiative is to develop and implement enhanced methodology to identify, prioritize, authorize, and monitor facility and infrastructure-related work in the ORNL facilities located at Y-12. Once these enhancements have been demonstrated, it is the team's goal to transfer lessons learned to the rest of ORNL. The team consists of stakeholders from four ORNL research organizations housed at Y-12 (Chemical Technology Division, Engineering Technology Division, Fusion Energy Division, Life Sciences Division), the ORNL P&E Division, and the Y-12 Facility Maintenance Organization.

ORNL has stewardship responsibilities for the upkeep of 25 buildings occupied by the four research organizations at the Y-12 Plant. Funding for maintenance of these facilities comes from ORNL. Overhead and budget responsibility is assigned to the P&E Division. The R&D divisions have facility management responsibility for day-to-day operations, including safe operation of the facilities and also have a vital interest in assuring

that the facility condition supports research mission needs. Although ORNL tenants occupy these Y-12 buildings and the ORNL P&E division ultimately funds maintenance, most maintenance and infrastructure craft work is performed by the Y-12 Facility Management Organization (FMO). All organizations agree that the combination of aging facilities, reduced budgets and increasing health and safety compliance concerns make it imperative that enhanced methodologies be developed and implemented for the management of facility and infrastructure work.

Anticipated outcomes from this first ORNL EWP project include:

- Enhanced documentation of methodologies for identifying facility upkeep priorities and budgets, based more on stakeholder consensus;
- Improved communications between all involved parties; and
- Fewer work delays due to unclear or conflicting priorities, incomplete work packages and unavailable or unprepared workers.

This initiative incorporates fundamental EWP tenets and advances the principals of integrated safety management. Specifically, safety will be improved through enhanced communication and planning among the affected organizations. Where possible, mechanisms will be put in place to avoid the 'eleventh hour' obstacles to effective work planning, scheduling and execution which have proven to be causal factors in workplace illnesses and injuries. Worker involvement will be emphasized in both the process to formulate enhancements as well as in the actual enhancements themselves. In addition, by bringing together key personnel from both Y-12 and ORNL, this EWP effort will enhance communication between the two adjacent sites and will result in more consistent and integrated work control mechanisms.

OHIO FIELD OFFICE

The Ohio Field Office Policy on Safety Management was revised to include a DOE/OH commitment to providing a formal, organized process whereby safety is integrated into work through formalized work management or work planning systems as defined by Enhanced Work Planning (EWP) Programs. This commitment reinforces DOE/OH's commitment to EWP and identifies EWP as a tool in implementing an Integrated Safety Management System (ISMS).

The status of ISMS within DOE/OH was presented at the Quarterly Executive Summit meeting attended by DOE/OH, DOE/OH Project Office, and contractor senior management. The presentation was developed based on a Defense Nuclear Facilities Safety Board (DNFSB) inquiry into the status of ISMS at sites of interest to the Board. Although the request was not applicable to any of the DOE/OH sites, the DOE/OH Manager viewed the request as quite significant and used the questions from the request to develop a DOE/OH ISMS baseline. The key issues to be worked by DOE/OH are to establish due dates for ISMS written descriptions and S/RIDS from B&W and establish expectation dates for verification of implementation for West Valley Nuclear Services and Fluor Daniel Fernald.

DOE/OH Technical Assistant Supports National EWP Steering Committee Initiative

The DOE/OH Technical Assistant was requested by EH-53 to provide support to the National EWP Steering Committee in the form of facilitating discussions at the meeting in Albuquerque, New Mexico, February 11-13, 1998. The meeting was held in conjunction with the DOE-wide Integrated Safety Management (ISM) meeting to promote an understanding of how EWP can best be integrated into this initiative. The discussions were directed to the development of a set of essential elements for EWP. Essential elements are those actions that must be taken at a given site in order for EWP to be sustained over the long term. This is especially important as EWP is recognized as a critical tool needed to effectively implement ISM. For that reason, it is important that EWP is in

place to support ISM. The essential elements provide not only the framework for long term EWP utilization, but also serve as a measure of how well each participating site is progressing toward a stable, institutionalized EWP process while implementing ISM. Many of the adopted elements had been applied by DOE/OH in initiating EWP across some of its sites. DOE/OH plans to use the same approach with ISM as was used with EWP, using these twelve essential elements.

FERNALD

Introduction

Enhanced Work Planning has demonstrated that increasing employee involvement in the work control and coordination process results in a reduction in backlogged work, improved field responsiveness, fewer delays, improved customer satisfaction while improving worker safety and productivity. The EWP process is being implemented across the facility with only minor adjustment and modification to the EWP process developed at Fernald.

EWP Department Resources and Staffing

The Fernald EWP staff remains constant with a total of seven members. In addition, part-time resources are utilized to assist in training, health and safety issues, self-assessment and performance indicators, and clerical and administrative support.

Fernald EWP Core Team Status

Buildings and Grounds Core Team

The team completed development, review, approval, and issuance of a new procedure that formalizes the way Buildings and Grounds

Services are requested, planned, reviewed, approved, and executed. All five key elements of EWP were incorporated and provided value to this procedure, but worker involvement and the graded approach provided the greatest benefit. Because of worker involvement in the early phases of this work process, tasks that previously required greater rigor in planning can now be done without detailed work packages by utilizing skill of the craft in the planning and execution of work. The worker, because of specific site skills and experience, has identified realistic (less conservative) thresholds that determine the rigor of planning required to do specific tasks. An immediate benefit was a 90% reduction in the number of work requests requiring detailed planning. Detailed planning adds an average of 20 man-hours to planning, reviewing, and approving work. Buildings and Grounds receives approximately 100 calls for work per month: $(0.9 \times 100 \text{ calls/month} \times 20 \text{ man-hours/call} \times \$35.00/\text{hour})$. The cost avoidance is approximately equal to \$63,000/month.

Property Disposition Core Team

The Core Team completed development of the enhanced property disposition work flow diagram. A new procedure integrating the requirements of at least seven other Property Management procedures is currently under development. It is anticipated that the new procedure will eliminate the need for at least three of the old procedures, possibly more, following validation of the new work process. Line management ownership has proved to be an instrumental element of EWP when incorporated into the property disposition work flow. In the past, the Property Management organization made decisions on property disposition without having direct accountability for the property. Following implementation of the enhancements, facility owners will be authorized to make decisions about their property, since they know the serviceability of the property better than anyone else, and will disposition unserviceable property without the rigor of unnecessary screening. The screening is taking an average of 180 days, and in many cases the property being screened has no residual value. Rough estimates now indicate that nearly 85% of the property in the radiologically controlled areas will meet the criteria, unserviceable. It requires an average of

15 hours to process and approve paperwork for property disposition. If one assumes conservatively 15,000 items of property must be dispositioned in the radiologically controlled area: (0.85 X 15,000 items X 15 hours X \$35.00/hour) yields a potential cost avoidance over the next 5 years equal to \$6,700,000.

Low Level Waste Above Grade Debris Movements to On-Site Disposal Facility Core Team

The goal of this Core Team is to establish the requirements for the packaging and transfer of waste to the on-site disposal cell. This Core Team has identified several programmatic areas that require improvement in order to track and document containerized waste. A draft procedure is being reviewed using the work flow diagram as guidance. The final draft procedure is expected to be completed the week ending April 3, 1998. The expected enhancements include an improved process to track and monitor the locations of containers, full or empty, and improved monitoring of material which will reduce the handling of wastes, thus reducing the risk to the employees.

Waste Storage Core Team

As a result of a major reorganization in this project area a New Core Team Leader has been assigned. This new leader is currently evaluating the work scope. Several procedures have been modified, consolidated and/or deleted that have changed the basic work scope of this project. This will require the development of a baseline to determine the accuracy of new roles and responsibilities of the workers and support organizations associated with the storage of waste at Fernald. The goal is to reduce programmatic redundancies, improve safety and maximize efficiencies. The Core Team will start regularly scheduled meetings either in late April or early May 1998.

Waste Material and Condemned Property Containers Core Team

The objective of this Core Team is to improve and ensure the safe and efficient handling of waste material, equipment, and waste containers, and to increase accountability to control these items at all times. This Core Team has completed its baseline work flow diagram and procedure changes. The validation of the baseline work flow will be from March 30, 1998 to April 10, 1998. During this time the workforce will be reviewing the work process and performing self-assessments. Training on enhancements and improvements will begin after the validation period and the identification and implementation of enhancements.

Waste Loading, Transportation, Storage and Shipping: Container Procurement Core Team

The Core Team was established as part of the corrective action response to the "Incident of December 15, 1997, Leaking Waste Containers near Kingman, Arizona". A detailed baseline work flow diagram has been completed which details the current process for container procurement and design changes. Validation of the baseline is underway, and an enhanced work flow diagram is being developed. This will outline significant improvements in the way containers are requested, designed, selected, tested, approved, and purchased. The process will result in a program which will encompass all relevant aspects leading to and including procurement of all containers used for the shipping of waste material from Fernald.

Safety and Health Permitting Core Team

The EWP Core Team has developed a baseline work flow diagram of the current work process. An enhanced work flow diagram to provide a more comprehensive work permitting system is also being developed. Work began on outlining a site procedure that will incorporate the enhanced system as it is being developed and tested through the performance period. Performance indicators are being developed to track the work process and enhancements.

The Core Team is developing a document control system which will link the work permits and safety related permits in a standardized document control program. This will allow the line organizations, supervisors, workers, and Safety and Health personnel to readily access all related forms which are necessary to perform work, and provide more efficient document traceability through closure.

New EWP Projects

As a result of management commitment to and expansion of EWP across all work areas at the Fernald site, the following new teams have been initiated during this reporting period:

Inspecting/Replacing Containerized Regulated Asbestos Containing Material

The scope of this EWP Core Team is to evaluate and enhance the process used to identify, remove and package asbestos containing materials. Utilizing the graded approach, this Core Team has identified the importance of support group participation in the development of an accurate work flow diagram, and the identification of individual and organizational responsibilities throughout the flow. The draft procedure issued during this period aided the employees learning curve by revealing to the employee how logic and safety lead the way in the work process. The Core Team has completed its baseline work flow and several procedure enhancements; this allows validation through self-assessment to begin April 1, 1998, and finish April 10, 1998. A new procedure will then be developed incorporating the enhancements. The successful completion of the enhanced work flow diagram and the supporting procedure will be a significant step in the development of the tools necessary to achieve a safe and least costly process related to the abatement, removal, and packaging of asbestos containing materials.

Legacy Waste Handling

This EWP Core team was established by the line manager to improve the process that was being used to identify, package and remove legacy waste at Fernald. The baselined work flow diagram was established by the third EWP core team meeting. Necessary procedural changes are being made and will be ready for review at the next scheduled meeting on April 2, 1998. This will allow the validation period to start. This core team validation period will run concurrently with the Waste Material and Condemned Property Containers Core Team's validation, which is from April 6, 1998 to April 10, 1998. This effort will concentrate on the integration with other Low Level Waste Core Teams, and the performance of work in a safe and cost effective manner.

Worker Qualification Core Team

This EWP Core team was established with the goal of having the right worker at the right job with the right tools, which includes qualification, at the right time. The Worker Qualification Core Team is working on enhancements to the Construction Subcontractor baselined work flow diagram. This effort also entails the baselining of permanent party workforce qualifications including personal skill sets, medical qualifications, and job specific training requirements. These baselines will be used as reference tools and for enhancing the worker qualification programs. The Core Team members have presented their regulatory drivers during the past two Core Team meetings for incorporation into the baselined work flow diagram. The presentations not only increased the level of awareness of shared requirements, but also fostered the understanding of the requirements in relation to the current worker qualification system.

Worker Qualification Project Meeting

The Worker Qualification Project meeting was held March 12-13, 1998 at Fernald. The two day meeting covered a variety of presentations regarding worker qualification tools from across the DOE Complex. Hanford and Rocky Flats presented the Automated Tools for Worker Qualification, which may be incorporated into the Fernald model. On Friday, March 13, the meeting

concluded with a unified goal statement for worker qualification and a path forward for the worker qualification project. Fernald was selected to pilot a worker qualification program for use at Fernald, with export capabilities for the DOE Complex.

WEST VALLEY

Although not a DNFSB site, the West Valley Demonstration Project (WVDP) continues to implement the DOE/WV and West Valley Nuclear Services (WVNS) ISMS implementation plans developed in 1997, which call for full ISMS implementation in FY-1998. The ISMS implementation plan calls for improvements to be made in eight subject areas, including improvements to the implementation of EWP to enhance task level safety performance. The ISMS work eventually triggered the development of the FY-1997 EWP Implementation Plan.

Fire Protection EWP Core Team

Last quarter, a Fire Protection Core Team kick-off workshop was held. Improvements were identified to enhance the current fire protection program, as well as align the WVDP Fire Protection Program with the new DOE Order 420.1, which included: 1) developing a system for prioritizing fire protection projects or work tasks; 2) reducing fire protection activities/work load through innovative solutions and integrate these evaluated results into the WVDP Fire Protection Program; and 3) developing an assessment process to analyze the risk associated with fire protection issues in order to understand comparative levels of risk, allowing for graded levels of response. From the re-engineering workshop a subteam, the Fire Protection Priorities/Risk Assessment Team (FPPRAT), was formed to address those identified areas. To date the team has completed:

- The issuance of letters to DOE requesting changes to the Property Loss Threshold and the list of WVDP facilities which require Fire Hazard Analysis (FHA). WVNS had been preparing FHAs on all facilities on site. Under

the proposed changes, and while still meeting DOE Orders, three existing facilities with readily available documentation that could be compiled into FHAs, would not undergo new FHAs that would only serve to duplicate the information already on hand. Instead, the existing information would be compiled into FHAs, as applicable. Since new FHAs are done on a contract basis and each costs as much as \$40,000, it is estimated that a savings of \$120,000 will be realized.

- Development of a risk assessment tool that can be used to evaluate the necessity and complexity of facility fire protection systems. The risk assessment tools have been used to assess the relative fire risk of new facilities built this year and to design fire protection features that meet the NFPA code requirements. In the past, these buildings might automatically have had a sprinkler system installed. This year, new buildings such as the new O2 Plant, the new Vehicle Maintenance Shop, and the Maintenance Cargo Box Facility were installed without sprinkler systems. These buildings were provided with alternate fire protection features, resulting in an estimated savings of \$5,000-\$7,000 per building.
- Reduction of the frequency of some fire protection maintenance activities which will reduce overall costs without incurring any significant increased risk. The contract service companies that inspect the fire protection systems have been directed to scale back the frequency of their inspections of systems to the minimum requirements of the NFPA Codes and Standards. Based on the labor time involved, this results in an estimated annual cost savings of \$15,000.

Overall, the estimated cost savings of FPPRAT activities to date is \$152,000.

Integrated Safety Management Implementation Progress

The WVNS ISMS Implementation Plan calls for numerous assessments and actions to be taken for full ISMS implementation in FY-1998. The plan recognizes eight areas where activity would be concentrated: 1) site engineering policies and procedures; 2) Job Hazard and Job Safety Analysis; 3) lessons learned/trending programs; 4) EWP and mockups; 5) job descriptions; 6) ISMS safety performance indicators; 7) Behavior Based Safety programs; and 8) continuous improvement (self assessments, feedback mechanisms).

During this quarter, WVNS submitted a summary report describing the completion of all planned activities associated with the eight action areas. Significant among the activities was that approximately 30 key policies and procedures have been revised, principally those used to generate and control work, to incorporate ISMS related improvements. Significant revisions addressing new hazard analysis procedures were also included in this effort.

WVNS also conducted an ISMS validation self-assessment to assess the level of effective implementation of ISMS at WVDP. The assessment was modeled after the Phase 1 and Phase 2 reviews conducted by DOE at DNFSB sites and included the same Criteria Review and Approach Documents (CRAD's) used in those reviews. The assessment has triggered further improvement actions by WVNS which are expected to be completed within the original ISM Implementation Plan schedule date of April 30, 1998. A draft WVDP ISMS Description Report has also been prepared.

EWP Site-wide Core Team Activities

An EWP Core Team, consisting of 15 individuals representative of all major organizations and work groups, including employees and union, met the first week of December 1997 to employ the EWP process to examine facility work planning processes.

The team developed a set of six recommendations with corresponding actions which were presented to WVNS management.

WVNS management concurred with the proposals and gave the team approval to pursue the following recommendations:

- Increase the use of dedicated teams for work execution to minimize inconsistencies and delays in work.
- Clearly define and appropriately use skill of the craft in work execution to minimize the development and use of unnecessarily complex work packages.
- Ensure appropriate use of the Industrial Work Permit (IWP) to re-focus and maximize the value of the IWP to provide personnel protection.
- Improve screening of work initiation documents to assess work package needs to minimize the development and use of unnecessarily complex work packages.
- Establish work coordinators for those organizations without one to improve communications between organizations.
- Establish a Work Review Group to perform interactive reviews of work initiation documents and work packages.

To date the Team has accomplished the following:

- Achieved 100% participation at the Plan of the Day meeting by support organizations.
- Revised site procedures to include the responsibilities of Work Coordinators.
- Established a pilot program in Main Plant Operations (MPO) for a departmental Work Review Group (WRG). As of March 19, 1998, the MPO-WRG has reviewed 112 work

documents of which 10 were returned for modifications and the remainder sent to the field. The joint reviews and simultaneous approval of the work documents has reduced the cycle time required to obtain document approval and improved MPO customer satisfaction. Estimated savings are on the average of several days per document. Approximately 1,000 work orders and 2,000 work requests are prepared annually at WVDP and thus, it appears that improvements in efficiency will be realized through this pilot program.

Maintenance Department Establishes New EWP Core Team

The Maintenance Department has established a new EWP Core Team. The team has been chartered to identify enhancements in the site's instrumentation/calibration and preventive maintenance work. An area identified for improvement was the consolidation of information pertinent to job cards. To date the team has modified 10% of the 3,000 job cards.

MOUND

On October 1, 1997, Babcock & Wilcox of Ohio (BWO) assumed responsibility for the Mound contract. This is an exit contract aimed at clean-up and transition of the Mound site to the Miamisburg Mound Community Improvement Corporation (MMCIC), a subsidiary of the City of Miamisburg where the Mound site is located. Activities involved in the DOE site exit include environmental restoration, building demolition, and facility transition/real property conveyance to the MMCIC. The areas reported reflect where EWP is being applied within the scope of the BWO exit contract. As evidenced by the discussion below, the BWO emphasis is on worker involvement and the use of multi-discipline teams leading to improvements in safety and operational efficiency.

Enhanced Work Planning for the Demolition of Buildings 35 and 59

Several portions of the Work Plan for the Buildings 35 and 59 demolition project involved employee/worker participation with the project engineer in the planning of work before the Work Plan was written. The removal of fiberglass inside Building 59 was planned through meetings with the maintenance foreman and a construction craft worker. The main concern was to be able to work safely at elevated heights. As a result of that meeting, an additional meeting was held that involved Safety/Industrial Hygiene, Radiological Engineering, and Waste Management personnel. The hazards involved and the methods to be used for the demolition of Building 59 were planned and discussed with the heavy-duty operators, the structural engineer, the Safety/Industrial Hygienist, the Radiological Engineer, and the Waste Management representative. Through multi-discipline team involvement and input, the main hazard identified involved the demolition of the second floor of the building and removal of an activated concrete donut that has a combined weight of 60 tons located approximately 20 feet above grade. Employee/worker involvement was a major contributor to the overall quality of the Health and Safety Plans and the Work Plan for this demolition project.

H-Building Demolition

The H-Building Project team was assembled with heavy duty equipment operators, maintenance foremen, operations personnel, Industrial Safety/Hygiene and Radiological Protection personnel to discuss the planning of work. The purpose of the meeting was to identify and address those hazards that could be encountered and what contamination levels might exist. In addition, discussions focused on the option of performing partial clean-up now and completing final clean-up after the building is vacated in CY-2000. With input from craft workers, it was evident that significant efficiencies would be gained by removing a radiologically-contaminated hot sump after the building is removed instead of attempting to remove it now. Other safety issues were identified with the building stack removal. With worker input, it was determined that the best method of removal was to rent a cherry picker and have the mechanic crafts attach chokers to the stack and lower it with the crane. Another option

would have been to build scaffolding and remove it a section at a time.

Building 50 Tank Removal

During the work scope planning process with the Building 50 Tank Removal Project Team, Industrial Safety/Hygiene, Radiological Protection, operations, and craft (Mechanics) personnel input was requested relative to the removal of a tank in Building 50 from its tight quarters. While viewing the job site, it became apparent that the 5-ton overhead hoist would be needed for the disassembly. The mechanics pointed out that the hoist would need to be inspected before it could be safely operated. Drawings from the original vessel manufacturer were obtained to verify the piece weight of the vessel. It was verified that it would not exceed the hoist capacity. Questions were raised relative to the presence of asbestos in the surrounding insulation. Samples taken indicated asbestos to be present which, in turn, caused the work scope to be modified to include asbestos abatement. Other questions were raised concerning potential contamination in part of the take off ducts attached to the vessel. Building 50 operating personnel checked the test records and verified that no contamination existed. It was then decided to remove the tank in pieces as opposed to cutting through the concrete roof, removing the overhead crane structure, and renting a 100-ton crane to remove it through the roof.

PANTEX

Where the initial applications of EWP tenets at the Pantex Plant were project oriented, EWP techniques are now being used to refine key aspects of the overall maintenance work control system. As more managers and crafts personnel experience the EWP process, they are able to expand the use of the process to solve more problems.

Within the maintenance organization, EWP is now recognized as a primary tool in implementation of key objectives within the VPP program and the Integrated Safety Management System as is the SS-21 program used by the plant's production organization. Specific activities pursued during the first quarter of 1998 include the following:

"Go-Do" Work Control Program

The most visible accomplishment for the EWP program during the first quarter of 1998 was the completion and implementation of the "Go-Do" work control system. Building on the success of the first EWP projects, the "Go-Do" effort was the first phase of an ongoing effort to streamline the processes used for planning and executing routine maintenance work.

As implemented, the "Go-Do" system is a special part of the overall work control system intended to accommodate work that is minor in nature, and performed by a journeyman crafts person. For qualifying work, the level of formality is reduced in a graded approach according to the risk and complexity of the job while ensuring that all safety and administrative requirements are met. Instead of having a formal work package planned and printed for every job, the Pantex FMI system transmits to each craft shop lists of jobs that are authorized to be worked using skill of the craft. The shop foreman, then gives crafts personnel short, written lists of jobs to be performed. After an informal pre-job discussion, the jobs are performed. At the end of the day, the craftsman simply turns in the list with check marks and minor notations beside each job indicating time spent.

The "Go-Do" effort represents a departure from traditional paper intensive work control systems frequently encountered in the DOE contractor environment. With the "Go-Do" system approximately 75% of the 15,000 maintenance corrective orders worked each year will be practically paperless eliminating the generation, processing, handling and filing of 20,000 - 30,000 printed pages of job orders. Additionally, maintenance personnel are expected to complete 700 - 2,000 more job orders annually.

The EWP Team will be monitoring the performance of the "Go-Do" system over the next few months to determine whether any adjustments are necessary and to document associated cost avoidance.

Preventative Maintenance EWP Team

The Preventative Maintenance team was established during the first quarter of 1998 to seek enhancements to the PM system. At the end of this first quarter, the Team identified and explored alternatives for addressing the following issues:

- Out-of-service equipment or systems are not being flagged in the current system which allows the next scheduled PM to print to the shops.
- PM Frequencies or "Nesting": if monthly, quarterly and annually PM's are due on the same month, currently all three print. Currently, the only way they would not print is if the PM Planning group manually tells the system not to print.
- PM Tickets are not being printed in adequate time for Craft Supervisor or Crafts personnel to review.
- More PM's should be on routes to increase efficiency. Candidate PMs include steam traps, dehumidifiers, hoists, security doors, fire pumps, HEPAs, and exhaust fans.
- Data obtained from performing PMs should be reviewed to determine whether the information collected is useful and whether the benefits of having this data outweighs the cost of collecting the data.

Pantex Lockout/Tagout Team

The general consensus of the existing Pantex lockout/tagout program is that it is compliant.

Some requirements, while appropriate for complex lockout situations, are unnecessary and burdensome when applied to simple lockout situations. The EWP team reviewed the Pantex Lockout/Tagout program to see if it could be modified to incorporate a graded approach whereby simple lockouts could be handled with lesser degree of formality.

Lockout/Tagout is important because approximately 50% of the 15,000 corrective maintenance jobs worked annually at Pantex require a lockout. Each lockout has a significant impact on the cost of completing the repair and the length of time the equipment or facility must be out of service. The potential payoff for this effort will be from reducing the number of crafts personnel needed to perform the repair, reducing administrative delays in starting work and reduced facility down times for each repair. The ideas being considered by the Team for improving the Lockout/Tagout program are:

- Reducing requirements for independent verification for simple lockouts. This will enable a single crafts person to perform repairs instead of two or three.
- Changing the way in which crafts personnel coordinate with building managers before performing a lockout/repair.
- Using a graded approach to the formality of lockout permits and in the use of the lockout points database.

The current Plant Lockout/Tagout standard is 96 pages long and is considered by crafts personnel to be highly complicated. At the end of the first quarter of 1998, the Team prepared a new draft of the plant standard that is undergoing a technical review. This enhanced version is 17 pages.

12-84 EWP Team

The 12-84 EWP team continues to make reductions in the number of maintenance-related events that affect production down time and schedule. To date the number of events occurring on a monthly basis is down 50% from before when the 12-84 EWP teams began their work. This translates into increased production efficiency and a combined cost avoidance of approximately \$1,000,000.

RICHLAND

EWP integration into the site Project Hanford Management Contract (PHMC) Integrated Environment, Safety and Health Management System Plan (ISMS) has continued to provide successes at the Hanford site. The DOE-RL ISMS point of contact and Project Director for ISMS Implementation continue to work closely with the Hanford Site EWP Coordinator and other key

personnel to assure successful ISMS/EWP implementation. The development and pilot of an ISMS/EWP survey, continuous improvements, contractors successes, and priority facility's ISMS implementation have been the focus for this reporting period.

During this reporting period, the RL's ISMS/EWP developed a baseline survey consisting of approximately 45 questions regarding such areas as worker involvement, supervisor involvement, communication, hazard identification, adherence to policies and procedures, and lessons learned. All the survey questions relate directly to the ISMS Activity Level Expectations and, therefore, to the 12 EWP essential elements. (The EWP Essential Elements are: a formalized site EWP process; formalized EWP training; committed resources; worker empowerment; line management ownership; DOE HQ and Field Office support; Site/Facility senior management buy-in; performance indicators/analysis; communication; mechanisms(s) for feedback, improvement, and evaluation; achievement of integration into other initiatives; and

documentation of the EWP process.) The survey will provide a more specific focus to approach facility ISMS/EWP implementation. During this period, FFTF completed their employee survey and the data has been assessed. FFTF achieved 90% employee participation (approx.) by including the survey as part of a safety meeting. The results included: more than 80% of those completing the survey indicated that they were familiar with ES&H policy and performed work consistent with that policy; fewer than 70% responded that individual workers assisted in the work planning and hazard identification and analysis process; more than 80% agreed that work planning teams effectively communicate the identified hazards, environmental impacts, and specified controls to all personnel performing the work activity; more than 80% believe that pre-job briefings cover task hazards and controls; however, fewer than 70% believe that the prejob briefings do not adequately cover actions to be taken during an emergency. As in any survey, a margin of error does exist and some responses were inconclusive based on a response of between 70% and 80%. This survey will soon be available on the EWP homepage for viewing. Currently, this survey is being administered to K Basins personnel with the results anticipated by the end of April. If necessary, the survey will be revised according to each facility's needs; however, the goal is to have a comprehensive survey that will provide measurable feedback without any modifications.

Continuous improvement for the site EWP Team included the addition of a formal charter. The charter states that the team, consisting of a multidisciplinary group representing Hanford Prime Contractors and Subcontractor personnel, will promote the principles of Enhanced Work Planning through Integrated Safety Management System implementation by adherence to four main responsibilities/roles: 1) assist PHMC facilities in implementing work practices that promote worker involvement in work planning and hazard analysis; 2) communicate lessons learned and work process improvement mechanisms across PHMC facilities; 3) provide support (training, performance improvement, mentoring, etc.) to PHMC facilities to meet effective work planning and safety management needs; and 4) support EWP alignment to ISMS management expectations at PHMC facilities. The team meets

monthly to participate in discussions of: current activities at priority facilities implementing ISMS/EWP; each facility's EWP progress and lessons learned; methods to institutionalize the EWP key elements in the field, and other activities designed to enhance the team's EWP implementation skills.

Major subcontractors have also made many EWP continuous improvements during this period. A site Maintenance Management procedure was issued which emphasizes EWP elements in work control practices that should contribute to a more standardized work control system for the site. TWRS established a project level, multidisciplinary EWP Team that will look at the TWRS work control process. This team was instrumental in creating a new work control process that has integrated EWP elements, such as a graded approach and work screening criteria, and has implemented a "Routine Work Request" involving skill-of-the-craft. This process categorizes work using the skill-of-the-craft document (available on the EWP Homepage) and is applicable to the "low risk/low complexity" work activities. Work is accomplished with either verbal or simple written instructions. Work activities, on average, have increased by 20-30 per month using this enhanced process. The solids and liquid waste facilities management contractor established a centralized maintenance/work control organization for seven facilities that have: integrated engineers into the maintenance organization; established an EWP Team consisting of several craft workers and operators; developed a single work control procedure standard; introduced a skill-of-the-craft (routine work) process for low hazard work activities; and "incentivized" EWP performance in their contract with the integrating contractor by listing criteria within their performance agreement.

The Plutonium Finishing Plant continues to identify areas where a graded approach can be applied to getting work performed. Specific goals have been established to identify additional areas where work controls and resulting work instructions can be simplified and/or eliminated when skill-of-the-craft is sufficient for performance. An average of 75% of the work performed monthly requires no formal planning. For the remaining 25%, workers are involved in the hazard analysis and work instruction development. In addition, the PFP has entered a

redesign effort (reengineering) of the work management process. The redesign team has been selected and new work management process modeling has begun. This effort is expected to further streamline the work planning process and fully incorporate the ISMS core principles.

The site integrating contractor has produced an informative brochure to provide an effective, yet brief overview of the Hanford ISMS. This brochure will be handed out during the Safety Expo to be used as an awareness mechanism for ISMS. A copy of this brochure is in Appendix B of this report. A computerized awareness briefing has also been developed to convey the many facets of the revised AJHA process. This briefing will be used as a continuous display to illustrate the AJHA that is integral to ISMS/EWP implementation. Sincere efforts will be made to produce an effective display for the Safety Expo as this is attended by many Hanford employees, local residents, and senior DOE personnel.

EWP training continues to be a major topic of discussion for several facilities. Some EWP training has been conducted at the Hanford site. Discussions with major contractors have indicated the need for more training. One hour EWP Orientation Training was given to the Maintenance Management Board (MMB), the Hanford Site ConOps Council, several Operational Readiness Review Teams, and Project Teams. Members of these groups were very receptive to the training. It is anticipated that these groups will help reinforce the need for continuing the site EWP training. The EWP Site Coordinator continues the process of determining specific EWP training needs for each facility. EWP training for priority facilities will be delivered as needed; however, should other facilities request the training, every effort will be made to schedule the appropriate training. Training for two of the Hanford priority facilities will begin during the second quarter of the 1998 fiscal year.

Referred to previously, the Hanford AJHA is a computer-based software application that supports work control and documents the process by providing an automated checklist to guide hazard and environmental impact identification,

evaluation, and control. Through three key EWP elements, employee involvement, teamwork, and a graded approach, the AJHA provides a systematic way to enhance hazard identification skills, for analyzing and controlling hazards, achieve ISMS objectives, and integrate ES&H with work management. The JHA Implementation Team has finished the development of the main screens that include hazard identification and controls, the risk and complexity-based approach, and access to permits and forms. Programming for these screens has been completed and this portion of the revised AJHA has been demonstrated several times, has been well received, and more demonstrations are scheduled. Constructing the HELP screens will continue into the next quarter. These screens will list the requirements (such as Hanford Procedures, OSHA regulations, etc.) and when completed, a user can click on the reference and hot link to that document via the internet or intranet. K Basins will pilot the AJHA after beta testing and final approval is received.

Looking ahead, EWP efforts will focus with K Basins ISMS implementation. A multidisciplinary team will be assembled to assist with the activity-level ISMS expectations. This is the main focus for the EWP portion of the ISMS where worker involvement, teamwork, and the graded approach are integral to the success of ISMS implementation. Ongoing efforts at other subcontractors will continue and will focus on EWP training needs and overall ISMS/EWP implementation.

ROCKY FLATS

The Rocky Flats Environmental Technology Site (RFETS) ISMS/EWP Steering Committee, consisting of senior line management from the integrating management contractor (IMC) and the major subcontractors is now actively directing the mission of the ISMS/EWP program. The site conducted a ISMS Verification on January 12 through 23, 1998 with positive results. The verification team noted areas for improvement

which have been the main focus of site activities during the quarter. EWP is a major implementation vehicle to the site's overall ISMS implementation plan. The Site is in the process of reengineering the Integrated Work Control Program (IWCP) focusing on the five ISMS functions, while utilizing the tenets of EWP. The intent of this IWCP reengineering effort is to create one program under which all work will be performed. The goal of this program is to remove any encumbrances to safe, efficient performance of work.

Some of the accomplishments the site has achieved towards implementation of ISMS are:

- Formed an organizationally diverse team to perform GAP analyses of the site's infrastructure programs to show where enhancements are warranted with regards to ISMS and EWP. This was completed on January 30, 1998.
- DOE-RFFO developed and approved a Site ISMS/EWP Implementation Plan to encompass the areas of improvement identified from the GAP analyses and verification process.
- DOE-RFFO approved the site's ISMS Process Description.
- Continued ISMS and EWP training which will be ongoing throughout the remainder of the fiscal year.

Activity Screen Process

One of the main areas of improvement identified by the ISMS Verification process was the site's activity screen process for determining the proper methodology for planning work. A team has been formed to develop an Activity Screen Process (ASP) procedure. The purpose of this ASP procedure is to identify requirements and provide criteria to screen activities in order to assist line

management in selecting a work planning process which includes:

- Characterizing an activity,
- Identifying the hazards associated with an activity, and
- Selecting the appropriate work planning process for integrating appropriate safety management programs needed to accomplish the defined activity and to establish required controls.

The ASP procedure provides information and instruction for assessment and screening all site activities. Characterization of an activity supports the selection of a project planning path that leads to an integrated safety management system approach for determination of required safety controls.

This procedure also establishes criteria for making decisions about planning work activities. It is designed to assist the responsible line manager in deciding which part of the existing site infrastructure will result in cost-effective planning, with emphasis on performing work safely.

In addition to providing screens to support the definition of activity safety bases and work planning processes, the purpose of this procedure is to furnish information and instruction to assist site management personnel in:

- Describing how site work is defined, by activity, and how these activities are classified as one of three types of work (construction, operations, or maintenance).
- Providing information on which safety management programs (SMPs) are needed to assess and control hazards through appropriate integration and implementation to support site closure

operations and activities.

- Providing a matrix of the role and function of the site SMPs hazard assessment processes, procedural tools, safety evaluation/change control processes, and related documentation used within the SMPs to identify, employ, and integrate the specific hazard assessment programmatic requirements associated with these programs.
- Describing the differences and commonalities in site SMPs hazard assessment processes and criteria for their use.
- Describing how various hazard assessment processes relate to one another, their hierarchy, ranking and graded approach to determine prioritization on their selection and use.
- Detailing how the ASP is used to select the appropriate work planning method, as a function of the complexity and inherent hazards of the activity.
- Integrating the ASP with the method of screening for selection of a work planning process.
- Providing facility and project management and work planners with instruction and guidance to proceed from the hazard assessment profile to the selection of an appropriate work planning process, e.g., Activity Control Envelope (ACE) and a Team Based Approach.

EWP Core Teams' Status

The first EWP Core Team completed its mission in revising the Integrated Work Control Process (IWCP) process to include: worker involvement beginning at the earliest phases of planning; a

team based approach to planning with mandatory craft involvement; and the performance of a job hazard analysis to become integrated with the ISMS functions. This IWCP revision was implemented site-wide on January 30, 1998. The Site is already beginning to see positive results with this change. The crafts are starting to have a more active role in the planning process, thereby allowing the actual work to run more efficiently and resulting in safer work practices. Because this revision has only been implemented a short while, this positive feedback is actually just a snapshot. The Site will need to continually look at this process to ensure continued implementation of ISMS and involvement of workers.

Four new EWP Core Teams have been formed to re-engineer the IWCP. Each team has a specific mission, while simultaneously trying to accomplish the same objective; ensuring ISMS is built into the processes in order for work to be performed more safely and efficiently. These teams are focusing on three main work control processes; 1) Maintenance Work Control, 2) Operations Work Control, and 3) Construction/D&D Work Control. A fourth Core Team is developing the job hazard analysis (JHA) process, which includes the use of an automated JHA tool. The re-engineering focus is to ensure ISMS is implemented within each process.

The Maintenance Team will streamline eight different work control procedures into one user friendly procedure which will be useful for all subcontractors working at the site. The team is in the process of drafting the procedure, and is approximately 75% complete. The final draft is scheduled for completion on April 30, 1998.

The Operations Team will develop a work control process for operations type work (i.e., mission program activities and surveillances). While this type of work is currently being conducted at the Site, there is no organized mechanism for ensuring its integration with the site's safety management programs. The team is drafting the procedure which is 75% complete. The final draft is scheduled for completion on April 30, 1998.

The Construction Team will develop a process for construction and D&D type work. Because of the Site's current mission, there are many outside subcontractors performing construction and D&D type work at the site. The Construction Team is utilizing the Construction Specification Institute (CSI) approach which reflects the method applied to construction work performed in the commercial world. The team must also incorporate the nuclear requirements into the process. The initial procedure is approved for the purposes of performing a pilot. D&D project. The project for the pilot is not currently identified but the process is expected to be tested during the summer.

All of these core teams interface on a regular basis and have a common objective to ensure consistent implementation of ISMS and EWP across the site. These three different work control processes will be included within the IWCP on Site. The new IWCP will also encompass the following: the Site ISMS manual; the ASP procedure; the Activity Control Envelope procedure (a formalized team based approach to performing hazards assessment and what-if scenarios); and a JHA process procedure. This is all part of the IWCP re-engineering effort to be completed and implemented by September 30, 1998.

The JHA Team is focusing on a job hazard analysis process to include an automated JHA tool which will be put on the site's Intranet. A procedure has been drafted and is in the process of being reviewed. Upon approval, this procedure will be included in the IWCP upon approval through the Site's change control process. This procedure includes a hard-copy JHA which is independent, but consistent with the automated JHA, thereby allowing a JHA to be performed in the event the computerized version is not operational. This procedure describes how to implement ISMS using the EWP tenets at the floor level with respect to hazard analysis planning.

DynCorp, Inc. EWP Teams

During this quarter, DynCorp, Inc. (DCI) initiated an EWP team within the site's Steam Plant focusing on improving operations. This team was successful with their scope and achieved the following accomplishments:

- Updated all Steam Plant and Utility operating orders.
- Improved operators' awareness of the Steam Plant Emergency Response Plan.
- Improved communications between the Steam Plant and the maintenance department, allowing more effective use of their resources.
- Revised the Conduct of Operations matrix for the utilities division.
- Initiated an engineering feasibility study to improve operations during the summer months.

DCI is also planning on initiating three new EWP teams to improve processes in the following areas: Maintenance, Transportation, and Property Utilization and Disposal (PU&D). These teams will be trained using the national EWP curriculum, with assistance from Kaiser Hill and DOE headquarters. Training is currently scheduled for April 23, 1998.

DCI was also responsible for successfully piloting a revised Lock Out/Tag Out program for Minor Maintenance. The hourly craftsmen were the main drivers for developing and implementing this process. This new process allows the worker to hang personal locks on those tasks defined as Minor Maintenance. Although this is not a new concept, this is new to RFETS. This program is now being processed through the site's change control process for implementation on a site level. This has already resulted in an average monthly DCI cost avoidance of \$15,000.

SAVANNAH RIVER

During the past quarter, Savannah River Site (SRS) began implementation of a strategy to achieve a September 30, 1998 Annual Operating Plan (AOP) Milestone, to "Implement the Enhanced Work Planning Process and obtain DOE approval". SRS currently has three separate on-going initiatives: NMSS Waste Minimization, Maintenance Reengineering, and Environmental Restoration Health and Safety Planning. In the first quarter, the SRS Steering Team developed a "Vision of Success" for site-wide implementation of EWP which includes institutionalizing a process with the following attributes:

- Focuses on Worker Safety
- Can be used by all site personnel
- Has strong management and stakeholder support
- Is applicable to all processes (not just work planning)
- Is integrated with ISMS
- Is well documented (e.g. Site ISMS Description Document, Site Policy for ISM)
- Has process experts trained and "in place" to facilitate core teams

The following draft action plan has been developed to provide a "path forward" to achieve success:

- Develop a sales presentation to describe site-wide implementation of the EWP process. The goal of this presentation is to

convince SRS Management of the benefits of site-wide implementation and to commit the resources to implement the EWP process. The presentation addresses the following issues:

- Current challenges
- Processes used to attain successes
- Benefits
- Demonstrate that EWP is similar to existing processes (use real examples)
- Emphasize that EWP is designed to make the improvement process more efficient, effective, and consistent
- Emphasize initial applications (and choice of them).
- Develop a process guide for the EWP program. The Process Guide will provide an "instruction manual" describing the process to assemble teams, perform process analysis, and identify process improvements. The guide will be a more detailed, site-specific version of the EWP Training Program. The following elements will be incorporated:
 - Existing Total Quality (TQ) tools,
 - Benchmarks from other sites and capitalize on the enhancements made at the Nuclear Materials Stabilization and Storage Division (NMSS),
 - Site-specific examples,
 - Methodology for importing and exporting tools and products, and

- Quantification of results, measures, or performance indicators used to measure success.

- Tailor DOE-HQ EWP training. The goal is to develop site-specific training to educate general site population and to provide specific instruction to core team personnel. This will be accompanied by:
 - Integrating SRS Total Quality Tools into the program and provide them to DOE-HQ for complex wide distribution.
 - Developing a 15-minute "safety meeting" version for general employees
 - Developing a "long" version to coincide with process guide.
- Identify and establish Site EWP resource personnel (mission: advertise and proliferate process). EWP resource group will be a site-wide group that personnel can access to facilitate EWP Projects and train team personnel.
- Document EWP program. The goal is to provide a description and process for on-going, consistent site-wide implementation. The program will be formalized and included in the ISMS Description Document. ES&H Programs and ISM representatives have been added to the Site Steering Team to assist with documentation.
- Identify the initial applications of EWP, with help from sponsors to make them happen. Examples include:
 - ISMS Phase II resolution of findings
 - Common FEB issues (pervasive, recurring)

- Safety-related initiatives coming from Facility Managers Council, First Line Supervisor Council, and
- Subcontractor work/safety planning (not limited to ER).
- Establish performance indicators for measuring success of EWP implementation process.
 - What is process being applied to?
 - What are the results?
 - What are the implementation issues?
 - What are the reporting mechanisms?

Site-Wide Implementation/Integration with ISM

SRS attended ISMS/EWP Steering Committee Joint meeting in Albuquerque, NM from February 11 - 13, 1998. An SRS Documentation package was developed and distributed to other DOE Site personnel. SRS collected information on other site programs to review available tools. In addition, the document explained ways to integrate EWP with ISM.

Site EWP Steering Team Meetings were conducted on February 4, 1998 and March 6, 1998. Prior to the March 6, meeting SR and Site Maintenance Programs personnel met to discuss elements of site-wide implementation and institutionalization of EWP in accordance with AOP milestones.

The March 6 session was an all-day training program. The Steering Team and DOE SR ISM and EWP representatives reviewed the EH EWP

Training Program as a first step in developing the action plan for site-wide implementation. The training materials were presented by DOE-EH personnel.

Subsequently, on March 11, the Steering Team and other cognizant personnel reconvened to "brainstorm" a course of action for site-wide implementation. As a result of the meeting, ideas were developed relative to the long-term picture of success, issues with sponsors and stakeholders, key stakeholders and sponsors, marketing and communication, training items, performance indicators, application of the EWP process, elements of the action plan, and documentation of the EWP process. This brainstorm session was consolidated into the action plan described in the overview section above for review by the Steering Team in April. In addition, a draft presentation was developed for "selling" the program to senior management.

DOE-SR and WSRC met on integration of EWP with ISM. The following actions were agreed upon:

- EWP Process will be documented in WSRC ISMS Description document (8/98 rev.).
- EWP Process will be documented in Site Policy for ISM.
- ESH programs representative will be added to EWP Site Steering Team.

The EH Training Program will be supplemented with SRS TQ/Process Improvement tools for performing "AS-IS/SHOULD-BE" process reviews, team building, and establishing performance indicators. This material will be exported to EH for incorporation into complex-wide training materials.

EWP Project: Maintenance Reengineering

The GAP analysis of the Work Control Pilot Procedure will be completed in April. The GAP analysis will review work control improvements that were implemented through the Maintenance Reengineering Program to identify areas for improvement. Remaining activities are to review Work Management Center (WMC) in the field.

An SRS EWP Documentation Package was prepared and distributed at the Albuquerque meeting. This package included a description of the Maintenance Reengineering Program and Work Planning Improvements resulting from the reengineering pilots, including: *Work Management Center, Fix-It-Now Work Hazard Screening, Scheduler as Project Manager, Run to Fail, Intrusive PM to Predictive Maintenance, Installed Process Instrumentation (IPI) Reclassification, PM Cleanup, Advanced Radiological Worker Program, Davis-Bacon Screening, and Implementation of the CMMS- Computer Maintenance Management System*. Details of these initiatives were provided in the last quarterly report.

An SRS Maintenance Information Homepage was developed that includes a description of the EWP process, and links to the DOE EWP Homepage.

EWP Project: Waste Minimization Work Planning

The EH Training Program was modified to a two-hour site specific version for use with the Waste Min "Drill Down Team". The site process for packaging and processing job control waste was modeled during the course and several improvements identified for further review. In addition the team identified a path forward to complete the pilot project. This training course was held on 4/2/98.

The evaluation of the H-Canyon facility ("As-Is") was conducted over several weeks to baseline the work planning and waste packaging processes in place. The team reviewed waste characterization, handling, packaging, and disposal documents and records that the H-Canyon facility had generated over the past 2 years. Meetings with facility

Generator Certification Officers (GCO's) from H-Canyon were conducted on January 28 and February 4, 1998 to review this information. In addition, the team reviewed finding reports generated by various organizations over the course of their normal inspections in H-Canyon and conducted initial plant walkthroughs.

Following the walkthroughs, the team (Health Physics, Operations, WasteMin, and Management) met on the South Dock area of H-Canyon to observe 2 B-25 type boxes being packaged for direct disposal in the E-Area Vaults (EAV). Records were generated regarding package weight and contents. This review determined that over 60% of the B-25 box volume was occupied by reusable hoods and airline hoses. In addition, void spaces accounted for approximately 40% of the space in the boxes. The large volume of hoods/hoses was verified based on a review of the respirator issue facility. It was determined that about 20 complete sets of hoods, hoses and plastic suits were issued on a daily basis. A second waste packing observation was also conducted which confirmed the initial review within a few percent.

As a result of these "As-Is" reviews and subsequent brainstorming sessions, some preliminary process improvement ideas have been generated, as follows:

Eliminate Waste Generation:

- Re-use air hoses.
- Use negative pressure respirators in lieu of air supplied suits where possible.
- Seal up suits in bags prior to entry to allow unused suits to be recycled.
- Use proper amount of hose (do not overestimate). Have correct amount listed in Work Package.

SELF-ASSESSMENT

SECTION 2

- Include waste minimization topic in pre-job briefs conducted by Health Physics.
- Investigate different material for hoods and airlines that could be incinerated.

Recycle Material:

- Re-use non-contaminated air hoods on successive jobs in the same area.
- Evaluate laundering of respirator hoods.

Volume Reduction/Material Substitution:

- Review incineration of hoods with Solid Waste Facility and Consolidated Incineration Facility (CIF) personnel.
- Vacuum seal waste bags to reduce air in packages and increase packaging efficiency.
- Install Waste bags with HEPA filters to eliminate air in packages.
- Shred, chip or compact waste to reduce volume.

Miscellaneous:

- Improve waste segregation by placing two waste receptacles at high potential job sites, rather than placing all waste in one E-Area Vault bag.
- Reduce the surface area when setting up Contaminated Areas (CAs) and High CAs.

Management/Work Practices:

- Issue a directive to re-enforce CIF and EAV segregation.
- Remove majority of EAV waste containers to eliminate CIF waste from being disposed of improperly.
- Increase management support of WasteMin. Inform personnel that WasteMin is a priority.
- Have RadCon Roll-Back areas instead of requiring plastic suits and hoods, wherever practical.
- Hold personnel accountable for waste minimization.

SELF-ASSESSMENT OVERVIEW

The Self-Assessment initiative to strengthen the feedback and control process within the framework of Integrated Safety Management continued during the first quarter. Efforts to improve feedback in DOE site offices through implementation of innovative Operational Awareness Programs moved from development to trial implementation at the DOE Berkeley Site Office and the DOE Brookhaven Group (BHG). Demonstration projects to increase worker involvement and line management ownership of feedback and control processes continued to make substantial progress at the Idaho National Engineering and Environmental Laboratory (INEEL), the Rock Flats Environmental Technology Center (RFETS), the Brookhaven National Laboratory (BNL), and the Lawrence Berkeley National Laboratory (LBNL).

In March, over 40 representatives from the sites involved with EH's demonstration projects and

DOE headquarters met in Idaho Falls to review the status of the project, examine lessons learned from development and trial implementation of tools, and discuss barriers to change. Participants in the workshop included a cross section of workers and supervisors, line managers, environmental safety and health specialists, and project managers. The meeting provided a unique opportunity for participants to network with peers facing similar challenges in striving to improve systems and test new tools as well as candid exchanges on the effectiveness of various approaches to promote change. In assessing the value of the meeting, participants affirmed that the opportunity to exchange information face-to-face represented a powerful reinforcement to continue their efforts to affect change. The demonstration projects for improving feedback and control processes at DOE sites are producing significant tangible and intangible benefits. At both RFETS and INEEL, increased worker involvement through employee suggestions, job observations, and employee walkabouts have resulted in potentially significant cost avoidance including improvements in efficiency, productivity, and resource utilization. These processes are also improving safety and health along with the protection of the environment through enhanced recognition and mitigation of hazards and identification and elimination of deficient conditions.

As a direct result of these demonstration projects, the DOE area and field offices are forging new partnerships with the integrating and operating contractors to promote effective implementation of ISMS. The formation of implementation teams, with representation from both DOE and the contractor community at RFETS, INEEL, and BNL, has strengthened cooperation and helped to establish new communication channels for building shared expectations and common understanding. The result is closer cooperation, better understanding, enhanced sense of teamwork, and belief that all members leave are working towards a common purpose.

BROOKHAVEN NATIONAL LABORATORY

Self-Assessment

On October 10, 1997, the Self-Assessment Improvement Team (SAIT) at Brookhaven National Laboratory (BNL) submitted the report entitled *Implementation Plan for Improving the Brookhaven National Laboratory Self-Assessment Program*. This document provided details on implementation of recommendations identified in Baseline Report of the Self-Assessment Improvement Team at Brookhaven National Laboratory submitted on September 25, 1997.

In the first quarter of Fiscal Year 1998, self-assessment implementation efforts were initiated. These efforts focused on three high-priority initiatives. The first initiative was to develop the BNL Self-Assessment Program definition and description. It was intended that a draft program manual be written and submitted to BNL management. The second initiative was to prepare a proposal for reinstituting a BNL Suggestions and Concerns Program. This was critical because it was an issue directly identified during baselining efforts, and BNL had discontinued its suggestion program several years earlier. Finally, the third initiative was to conduct preliminary training to communicate an awareness of the definition of self-assessment and associated activities. Again, this was an issue discovered during the baselining efforts. These awareness sessions were given to a sampling of BNL staff, including Environment, Safety and Health (ES&H) Coordinators, Quality Assurance Representatives, and a cross-section of employees of the Plant Engineering Department.

During this period, self-assessment implementation efforts expanded to include line organization participation, with the objective of increasing worker and management involvement and self-assessment activities including workplace assessment for internal Tier 1 ES&H inspections, Time Out for Safety days, job assessments, procedure reviews, and job observations).

The overall status of the project was formally presented to the BNL Leadership Council at the Management System Improvement Program Status Meeting held on February 6, 1998. In addition, two members of the SAIT attended a meeting of the five U.S. Department of Energy pilot sites participating in the self-assessment improvement initiative. This meeting was held in Idaho Falls during March 18-19, 1998. During these meetings, the status of the individual initiatives were reported. This status report is given below, which includes the following initiatives: Self-Assessment Program Plan, Employee Suggestions/Concerns Program, Involve all Employees in Self-Assessment, Time Out for Safety, and Awareness Training.

Self-Assessment Program Plan: Final revisions were made to the draft program plan. The program plan outlines the Self-Assessment Program and includes policy, mission statement, program structure, and roles and responsibilities for each BNL employee. The draft was given to members of the SAIT for review and comment. After this review, the program plan was distributed to BNL management on February 6, 1998, for their review and comment.

Employee Suggestions/Concerns Program: The Employee Suggestions and Concerns Program proposal draft was completed by the subteam. On February 6, 1998, it was submitted to BNL management for approval and further direction. On February 20, 1998, the subteam met to discuss future activities and anticipated involvement in the pilot program. Additionally, the proposed BNL Suggestions/Concerns program was presented at the Idaho Self-Assessment Workshop. Input provided from the other participants at the workshop is being considered. It is anticipated that some revision will be made to the Employee Suggestions and Concerns Program proposal after management comments are received.

Involve All Employees In Self-Assessment: Several pilot programs are underway which target the expansion of the employees role and increased management involvement in the internal ES&H inspection process (Tier 1 inspections). Eight on-site organizations are involved currently. The

Departments/Divisions reporting success in meeting these goals are the National Synchrotron Light Source, Instrumentation Division, Physics, and Advanced Technology. Others involved in establishing these pilots include the Department of Applied Science, Plant Engineering, the Alternating Gradient Synchrotron, and the Chemistry Department. Positive results have been achieved in this area based on feedback to the SAIT at monthly meetings. Members of the SAIT continue to act as facilitators for all Departments/Divisions involved. The next area of improvement under this initiative will be establishing a guideline for performing job assessments (post-job reviews, procedure reviews, and job observations). Definitions have been drafted to characterize job assessments for those Departments/Divisions seeking involvement.

Time Out for Safety: This pilot program, based on the concept of a safety stand-down, was held in Plant Engineering in February. It consisted of a half-day meeting of a small group of workers from various trades. Activities included review of injuries and accidents, a discussion of prevention strategies, technical training, review of procedures, and a presentation of self-assessment concepts (self-assessment awareness). An exit survey was conducted to characterize the success of the pilot. Feedback from participants was positive, recommending continued development both inside Plant Engineering and in other Departments/Divisions as well. A similar pilot has been scheduled for the Department of Advanced Technology for June 4, 1998. An effort will be made to advise participants in advance so any safety issues previously identified can be addressed.

Awareness Training: A third awareness session was given to a cross-section of Plant Engineering personnel at their pilot Time Out for Safety meeting on February 17, 1998. Other awareness sessions are currently being planned, and have been offered to all Departments and Divisions through a communications board posted in the BNL cafeteria. The information board is set up similar to a poster session with a definition of self-assessment, policy statement, overview of the program, update of current activities/initiatives, and a team member roster. There are two

brochures--one explains self-assessment overall and the objectives of the program. The second brochure highlights some of the activities already in place at various departments and divisions across BNL. These brochures are periodically restocked. Plans to update the information board posted at the end of December 1997 are underway.

It is intended that site-wide implementation of the Self-Assessment Program Plan be instituted by September 1998. The Self-Assessment Improvement Team is currently working with the new BNL contractor, Brookhaven Science Associates, to achieve management buy-in of the new and improved BNL Self-Assessment Program. Efforts for the next quarter will focus on developing management walkthrough criteria, instituting a plan for job assessments, and a possible pilot of the Suggestions/Concerns Program.

DOE Operational Awareness Program

The DOE Brookhaven Group (DOE-BHG) continued efforts to establish an innovative and comprehensive Operational Awareness Program at the Brookhaven National Laboratory (BNL) in the first quarter of 1998. Efforts focused on developing an Environment, Safety and Health Management Plan for DOE-BHG to provide an overall framework for management of all ES&H activities by DOE at the site. In addition, DOE-BHG approved and issued the Operational Awareness Program Document and continued to implement the program across the site.

DOE-BHG, with support from the EH Technical Assistance Program, developed and finalized a new top tier management document to guide the Office's management of ES&H functions at BNL. The document establishes ES&H policy, describes the Office's organizational structure, and addresses major roles and responsibilities. It also provides an overview description of BHG's ES&H oversight activities including the Operational Awareness Program, functional assessments, and ES&H/infrastructure prioritization. The ES&H Management Plan has been reviewed by the

DOE-BHG management team and is now awaiting approval by the DOE-BHG Executive Manager.

Implementation of DOE-BHG's Operational Awareness Program continued to gain momentum in the first quarter of 1998. Personnel performing Operational Awareness activities began preparing and submitting regular biweekly reports to management summarizing activities completed and results. In addition, the DOE-BHG staff completed an initial follow-up evaluation on various findings and deficiencies identified during the Office of Environment, Safety and Health's Office of Oversight appraisal in 1997. The site's Facility Representatives began to transition their offices to their assigned facilities at BNL. Efforts continued to fill positions for Facility Representatives and Safety and Health Support Specialists to achieve a full compliment of personnel tasked with primary responsibility for Operational Awareness.

On April 7, DOE-BHG and BNL reached a significant milestone as senior managers for both organizations signed a new agreement governing implementation of the Facility Representative Program at BNL. The agreement identifies guiding principles for the program, specifies responsibilities for both DOE-BHG Facility Representatives and for BNL managers and employees and, establishes mutual expectations. The agreement is an important demonstration of the commitment of DOE-BHG and BNL to establishing a more effective partnership in ensuring safe, efficient, and environmentally sound operations at BNL. Over 40 people attended the signing ceremony including BNL senior managers, facility managers and environment, safety and health personnel along with DOE-BHG managers, facility representatives, and staff.

During the second quarter of 1998, EH Technical Specialists will work with DOE-BHG staff to complete development of a broad range of supporting documents that will provide the balance of the infrastructure for the Operational Awareness Program. This will include developing draft procedures, assessment guides, and surveillance guides for use in performing Operational Awareness activities and

programmatic performance assessments. Other areas where support may be provided relate to training and qualification program development and planning for the first self-assessment of the Operational Awareness Program.

IDAHO

The Idaho Operations Office (ID) and its management and operating contractor are conducting a self-assessment pilot program at the Radioactive Waste Management Complex (RWMC). The DOE-EH Technical Assistance and Self-Assessment Management Plans define the strategy for implementing the LMITCO funded pilot with assistance from DOE-EH Technical Assistance. The contractor management selected the Radioactive Waste Management Complex (RWMC) as the initial INEEL organization to conduct the pilot with plans to expand successful process across the INEEL.

Self-assessment as defined by the pilot team is “an organization’s self-administered, ongoing process to identify and implement changes for improved safety, effectiveness and efficiency.”

The objective of the INEEL Self-Assessment pilot is to implement simple process tools as part of the employee’s work activities to:

- Improve safety, compliance, and operational efficiency
- Enhance continuous improvement awareness

The INEEL Self-Assessment Pilot is encouraging employees to work safely, comply with regulations, and continuously improve safety conditions. The INEEL Self-Assessment Management Plan identified three essential elements of an effective self-assessment

program:

- Processes and tools that encourage and assist employees to effectively identify and implement opportunities for improving efficiency, effectiveness, and safety;
- Information management processes and tools to document assessment outcomes, assign responsibility, track resolution and provide feedback to employees; and
- A positive self-assessment environment with both employee and manager commitment and involvement.

The self-assessment tools are supporting several major initiatives at INEEL including Enhanced Work Planning (EWP), the Voluntary Protection Program (VPP), Environmental Management excellence, and Compliance Re-engineering. Lockheed Martin Idaho Technical Company (LMITCO) management expects the tools developed during the self-assessment process to help achieve the goals of these site-wide initiatives.

Integration of activities from these related initiatives have common goals, similar tools, and interdependencies. In order to minimize duplication, avoid conflicting requirements, and capture a shared vision, a LMITCO team of initiative leaders was formed to incorporate best practices from the improvement initiatives to support the LMITCO operational excellence plan.

LMITCO line management relied on a multi-disciplinary team from the major INEEL facility organizations to develop the self-assessment pilot program tools. The team included representatives (bargaining and non-bargaining unit workers) from RWMC operations and maintenance, Quality Assurance & Operations, Safety & Health (VPP), TRA Operations, SMC/TAN Operations, ICPP Operations, and Environmental Affairs.

If the pilot program is judged successful, the broad facility representation will help expedite the transition from the pilot to site-wide application. In addition, plans for self-assessment training, supervisor/foreman involvement, and employee participation to achieve employee ownership of the program have been defined as part of the pilot demonstration.

Ultimately, LMITCO wants to implement the tools that are developed throughout the site. RWMC line management has agreed to test the specific processes and tools to provide recommended improvements. The Implementation Plan used in the pilot identifies the roles, responsibilities, and actions for the self-assessment pilot.

Status of Activities

Implementation of the self-assessment process tools began at the RWMC in December 1997. Specific RWMC line managers and supervisors were selected to serve as coordinators and management champions for each of the self-assessment processes and tools. During the pilot, the management champions are responsible for implementing and encouraging use of self-assessment processes and tools. As an adjunct to and support mechanism for the management champions, RWMC workers involved in the development are responsible for assisting the management champions in implementing the processes and tools.

Management Walkabouts

Management walkabouts are structured to ensure that managers take time to be approachable in the workplace. The purpose of this walkabout is not to evaluate or assess activities and facilities, but to gather input from the workers on worker perceptions, ideas for improving the working environment, and for improving the communications in the organization. The managers use the walkabouts to solicit input from the workers, to listen to the workers, and to answer questions that may arise. This activity increases communication and enhances trust between the manager and workers.

Under the RWMC pilot, walkabouts are performed as follows: Director, monthly; Program Manager, weekly; and Supervisors, daily (as possible and practical). The workers are using this opportunity to offer opportunities for improvement and to express their concerns about (1) funding, (2) job security, (3) the need for having a clear path forward, and (4) a desire to rely more on work scheduling. Many of the issues being discussed have no simple solution. However, the process and the information obtained will aid management in understanding worker issues and in developing means to resolve them. Focusing on the employee issues will help the organization make the cultural change to produce a flexible and constantly changing environment.

Employee Walkabouts

Employee walkabouts are performed as a surveillance of operational and administrative areas within the plant. Employee walkabouts are being used at RWMC to evaluate safety conditions throughout the facility and to increase employees' awareness that self-assessment and continuous improvement should be an integral part of each employee performing his/her job. During the initial phase of the pilot, walkabouts have been performed weekly. As of the end of March, there have been a total of 66 walkabouts performed. The 66 walkabouts represent two cycles of review for RWMC building or area. The walkabouts are conducted on Tuesday afternoons. Typically, the employee walkabouts take 1.5 hours. These walkabouts include pre- and post-activity meetings. In all, 46 employees have participated in the walkabouts.

The workers use checklists as guides when walking through a work area. The workers are encouraged to use their own judgment and also identify issues not specifically on the checklist. By using the checklists, the employees have reviewed 1,743 total items, of which 1,516 of the items were found to be satisfactory and 227 were not satisfactory. Of the remaining issues identified, 124 have been resolved. The remaining 103 items are being tracked for action and resolution. An important feature of this process is that the individual who identified an issue receives feedback on the status and

resolution. The employee walkabout increases workers' safety awareness and ownership, improves communications between workers, and provides feedback to management on the condition of the facility. Workers involved in the process enjoy doing the reviews. Safety of the facility is being improved through the resolution of issues identified.

RWMC management is currently reviewing results and evaluating the process to determine if a reduction in the frequency of employee walkabouts should be considered for certain buildings and areas.

Post Job Reviews

The goal of the Post Job Review process is to encourage workers to self-assess the activities of a job or project at completion to identify areas for improvement, means of reducing or eliminating delays, and better ways to perform the job in the future. The Post Job Review Process, piloted at the RWMC, is being implemented to improve work by providing the worker a means to identify, communicate, and suggest work order and work performance improvements. The Post Job Review process at RWMC involves using an evaluation checklist to document performance of a corrective maintenance work order. As part of the pilot, the checklist is attached to all corrective maintenance work orders and is completed by either the lead craftsman or the foreman.

By design, the checklist takes about three minutes to complete. Information is provided in both numeric and qualitative format. The forms have been used to document deficiencies and to acknowledge the individuals who prepared work orders in a highly effective manner. There is mixed acceptance of this process. However, workers and supervisors recognize the need to be able to achieve resolution on process issues that undermine safety, efficiency or effectiveness of work. Since the beginning of the pilot, 93% of the corrective maintenance work packages have had the Post Job Review form completed. Responses have been provided on 100 percent of the comments raised on the forms.

A second benefit of the post job review process is that it is encouraging planners to interact more with the craft foreman and the crafts.

LMITCO management is currently reviewing results and evaluating the process to determine whether to roll out the process across the INEEL. Considerations being addressed include 1) the most effective means to obtain broad worker participation, 2) scope of application and frequency of use, mechanism for implementation, 3) checklist format, 4) responsibility for completing post job review checklist evaluation and follow-up on suggestions/trending of information, and 5) and documentation and evaluation of post job review process effectiveness.

On Line Leadership Development

On Line Leadership Development began at RWMC in March. The program enhances the communication, delegation, consistency, time management, conflict management and accountability skills needed by foremen, supervisors and managers to work successfully in an effective self-assessing continuous improvement environment. Participants meet eight times every two weeks in a four-hour seminar-style discussion group. The program has previously been implemented successfully at Hanford under the Enhanced Work Planning program. The expected outcomes include increased personal efficiency, lower stress levels, improved management/worker interactions and a more productive work environment.

Skills developed during On Line Leadership Development are expected to assist RWMC staff to more effectively support the site activities that increase 1) worker involvement, 2) managers' contact with facility activities and staff at the employees work location, and 3) positive, proactive communication between managers and employees.

Follow-On Actions

The RWMC Self-assessment pilot is strongly endorsed and supported by LMITCO senior management. The next major step planned at INEEL is to develop a plan to implement the self-assessment tools site-wide.

DOE BERKELEY SITE OFFICE AND LAWRENCE BERKELEY NATIONAL LABORATORY

During the first quarter of 1998, the DOE Berkeley Site Office (DOE-BSO) made substantial progress in implementing their new Operational Awareness Program. Two orientation sessions were held for personnel involved in the program and program participants developed initial implementation plans to define activities that will be completed. DOE-BSO personnel began conducting activities identified in the plans even as management reviews the draft individual implementation plans. In addition, efforts are underway to evaluate core competency requirements for DOE-BSO personnel participating in the Operational Awareness Program.

The Lawrence Berkeley National Laboratory (LBNL) continued to improve its self-assessment program with support from the EH Technical Assistance Program. Efforts in the first quarter of 1998 included aligning the self-assessment program with the laboratory's Integrated Safety Management System (ISMS) and continuing to improve the independent verification and validation process for ensuring the effectiveness of line management self-assessments. EH Technical Specialists also worked with LBNL to study expanding the innovative behavior-based safety program currently in use in one division of the laboratory.

DOE-BSO initiated their Operational Awareness Program in January by conducting two training sessions for personnel who will be involved with the program. Personnel from DOE-BSO, LBNL, the DOE Oakland Operations Office, and the University of California attended these initial sessions. During each session, senior management from the Laboratory and from DOE affirmed the importance of the program and

communicated their expectations for continuing to build a more effective partnership between the Laboratory and DOE. Members of the process improvement team who developed the Operational Awareness Program, including Laboratory and DOE personnel, presented information on the purpose of the program, implementation strategies, and potential challenges. Each session provided a valuable opportunity for participants to enhance their understanding of the program and to build a greater sense of a shared mission.

DOE-BSO staff in cooperation with LBNL staff developed individual implementation plans defining the Operational Awareness activities that will be completed during the remainder of fiscal 1998. These plans provide a general framework for the program and allow participants to eliminate duplication and overlap in planned activities, ensuring effective use of DOE's limited staff resources. Draft plans were reviewed by LBNL counterparts and were then submitted to senior management for review and approval.

Personnel from DOE-BSO completed initial Operational Awareness activities at the Hazardous Waste Handling Facility and in the Life Sciences Division. These initial activities involved observations of work activities and general walkthroughs. Each activity provided an opportunity for DOE-BSO and LBNL staff to work together in examining performance.

An EH Technical Support Specialist is working with DOE-BSO to evaluate core competencies required for personnel performing Operational Awareness activities. This effort is aimed at defining the knowledge, skills and abilities that are essential for personnel supporting the Operational Awareness program and then developing an approach for ensuring that personnel meet these core competency requirements.

LBNL focused on aligning its self-assessment processes with the laboratory's ISMS. Each division is developing an individual ISMS implementation plan that will address how the laboratory implements the guiding principles and the five core functions, including feedback and

control. In addition, each division is ensuring that its self-assessment activities address the performance criteria established in Appendix F of the contract between the University of California and DOE. These criteria are based on ISMS implementation as well.

Efforts to improve the process for verifying and validating self-assessment results continued during the first quarter with support from the EH Technical Assistance program. The laboratory is developing detailed program plans for validation activities. These program plans define roles and responsibilities, set overall expectations, and establish uniform processes. Activities addressed in the program plans include integrated functional reviews and management environment, safety, and health program reviews.

EH Technical Specialists worked with LBNL to evaluate potential benefits associated with expanding the application of the behavior-based safety program developed in the Facilities Department at the site. This program involves observations of work activities by craft employees to provide feedback on safe and unsafe acts. To date, the program has shown impressive results in reducing accident and injury rates in the division that had the highest historical incidence rate. The EH Technical Support Specialist participated in a steering committee meeting and attended training for personnel who will be assigned as observers. Efforts to expand usage of the program are focused on the Engineering Division, which operates fabrication and machine shops performing system design and upgrades.

ROCKY FLATS

Self-Assessment pilot activities at the Rocky Flats

Rocky Flats Environmental Technology Site (RFETS) continues to show positive results. There are currently two self-assessment processes on site. Continuous Improvement Through You (C.I.T.Y.), includes five major components: 1) Worker Walkarounds, 2) Management Walk-

Arounds, 3) Team Evaluations, 4) Job Observation/Suggestions, and 5) President's Brown Bag Sessions. The C.I.T.Y. process is the result of an ongoing development team led by Rocky Mountain Remediation Services, L.L.C. (RMRS) with a constituency of Kaiser-Hill, their principle subcontractors, DOE RFFO, and DOE-EH. The second process is Excellence In Motion, which assesses the effectiveness of operations in ten distinct areas to a pre-defined set of criteria on an annual basis. Excellence in Motion was developed by the site security force subcontractor, Wackenhut Services, L.L.C. (WSLLC). Both self-assessment techniques have resulted in specific improvements. Positive feedback is provided which supports Integrated Safety Management principles.

In mid-March, the C.I.T.Y. process was specifically presented at an INEEL Self-Assessment Conference. Representatives from WSLLC attended. They spoke with conference participants about specific features of the Excellence in Motion process, and the successes that had been realized to date. The conference provided an excellent forum for the exchange of ideas on self-assessment protocols and features proven effective at the various pilot Sites. In keeping with the integrated management contract at RFETS, representatives from RMRS and WSLLC continue to meet and discuss methods for employing the best features from each of the respective programs, and considering further integration of the two distinct processes.

Kaiser-Hill, the site integrator, is facilitating a Self-Assessment Summit for the RFETS in May. The pilot efforts of C.I.T.Y. and Excellence in Motion will be presented as self-assessment programs that may be used by other subcontractors for increasing communication, involving workers in planning and improving work processes, and enhancing the overall feedback capabilities across the Site.

C.I.T.Y.

C.I.T.Y. pilot activities are occurring in specific building operations within RMRS. In addition to

building/operation specific implementation, RMRS continues to develop and refine the administrative features of the process, including procedural control and the capability of tracking to closure the improvement opportunities identified and forwarded by employees. The C.I.T.Y. team is measuring effectiveness of the process based on the original objectives set for the program, which consist of: 1) Improved performance, employee commitment, and subsequent safety performance; 2) Increased worker involvement; 3) Increased management time in the field; 4) Increased proactive interaction between management and employees; and 5) Removal of barriers to process improvement.

The ability of C.I.T.Y. to meet the stated objectives is being measured in two ways. Participation and cost avoidance are tracked in the database. The C.I.T.Y. team also developed and implemented a survey tool to establish and track employee perceptions related to the effectiveness of the C.I.T.Y. program. The employee perception survey was conducted in one of the pilot activities as a baseline and will be conducted again within the next few months to determine if employees believe objectives are being realized. The questions used for this survey were based on RMRS program objectives. They were aimed at identifying employee perceptions of their work environment at the site. The survey contained fifteen questions and addressed topics such as work processing efficiency, worker involvement in work planning, worker commitment to continuous improvement in the work place, management involvement with the worker, and worker morale. Generally, the baseline data suggest that employee perceptions are middle of the road (2.84 out of 5) on any given question regarding their work environment. For example, the questions concerning work process efficiency had an average score of 2.94, while worker morale had a score of 2.65.

As a result of the pilot activities, the C.I.T.Y. program identified a cost avoidance of \$223,000.00. The cost avoidance is comprised of two improvement items. The first consists of a team evaluation, where RMRS hourly employees and management conducted a review at the Nevada Test Site. This was to determine the design effectiveness related to a glovebox design

being promoted at RFETS. The review resulted in cost avoidance in the area of design changes and operating downtime totaling \$20,000.00. This review and the pursuant design modifications resulted in the potential for substantial reductions in exposure rates, and reduction of the potential for injuries through ergonomic inefficiencies.

The second instance of cost avoidance relates to a process change in Building 776 acid contaminated glove inspection and wash operations. The change consists of allowing damp towels to dry in an enclosed and properly ventilated structure before removal; thus, eliminating a liquid waste stream to Building 774 for sampling and analysis. The cost avoidance associated with this process change is estimated at \$203,000.00. In turn, there is a reduction in potential exposure. The basis of the estimate is inclusive of sampling costs, labor, and costs associated with the disposal of liquid wastes. In addition to these noted cost avoidance, RMRS is processing other improvement initiatives which have a preliminary estimated worth of \$200,000.00.

The administrative aspects related to controlling the C.I.T.Y. process are continuing. The procedure to control the C.I.T.Y. process has been drafted and is in a peer review process. This review allows users to consider the features of the program and forward comments and ideas on how to best control the process from an operations perspective. The review enhances the ability to implement the process on a company-wide level in the future, and precludes numerous starts and stops of such implementation. The C.I.T.Y. database used to track closure ideas and suggestions from the various self-assessment tools within C.I.T.Y. continues to be refined. Features of the database include capabilities of tracking potential cost avoidance and trending of improvement initiatives.

In an effort to place accountability for the identification and improvement initiatives within the appropriate organization, the C.I.T.Y. program is being transferred to the operations side of RMRS. This will enhance the ability of improvement initiatives assigned to the appropriate organizations and individuals for

action, and increase overall communication on self-assessment within the operations organizations.

Excellence in Motion

The Excellence in Motion process was developed by Wackenhut Services. This process focuses on continuous improvement and professionalism in the Protective Force operations. There are four primary phases to the program: development, implementation, verification, and maintenance. Ten topical areas of the Protective Force operations were selected for self-assessment. Each topical area is processed through each of the four phases. During the development phase, a needs analysis is performed and a process is built. After implementation, the process goes into verification for further improvement. During the verification phase, issues and concerns are identified and forwarded to the maintenance phase for improvement. Once completed, the changes are referred back to the implementation phase, achieving continuous improvement. Through communicating topical areas, a feedback system has been created and all items are tracked. This allows workers at all levels to provide self-assessment and feedback and it establishes a management tool to address employee needs.

The program is implemented one topical area at a time. The program is designed to proceed from fiscal year to fiscal year, while assessing 100% of the topical areas. While much of the program is in the development phase, the concept is implemented and will be described in detail in next quarter's report.

APPENDIX A

EWP National Steering Committee Meeting Notes

Enhanced Work Planning (EWP) National Steering Committee Meeting Summary

Albuquerque, New Mexico

February 11-13, 1998

The Quarterly Enhanced Work Planning (EWP) Steering Committee meeting was held in conjunction with the Third Integrated Safety Management Lessons Learned Workshop. The combining of these two meetings provided an opportunity for Committee members to share lessons learned from EWP and Self-Assessment with members of the ISM community. The consensus from the EWP Steering Committee and ISM staff was that both programs are working toward similar goals. The National EWP Steering Committee is exploring options to function as an ISM-sponsored subcommittee on how to achieve ISM at the activity level.

Additionally, each of the site EWP Steering teams are requested to add the implementation of ISM principles such as worker participation, effective hazard analysis, and the feedback process at the task and facility level to the program focus. The efforts of each of the site steering teams will continue to coordinate through the EWP National Committee, which EH-53 will continue to chair.

Meeting Objectives: All objectives of the meeting were met.

- Update Steering Committee on status of Enhanced Work Planning (EWP) sites.
- Identify the essential elements for making EWP viable at participating sites and identify those actions that can be taken in FY 98 to achieve that viability.
- Share lessons learned on what works and doesn't work to implement and sustain EWP.
- Develop an action plan that leads to the implementation of the essential elements at EWP sites.

The essential elements and suggested actions for sustaining EWP at the site level and the fourth quarter site status reports for each EWP site and are given below.

Essential Elements and Suggested Actions for Sustaining

Enhanced Work Planning at the Site Level

Introduction

One of the Committee's meetings objectives was to identify those elements that must be in place at a given site in order for EWP to be sustained over the long term. The Committee identified twelve Essential Elements, given below, that should be in place to ensure the long term viability of EWP principles. The Committee also developed suggested action steps that each site should consider and adopt, as appropriate, as a means of accomplishing each of the twelve elements. These steps are intended to serve as guides based on site-specific needs.

Enhanced Work Planning is an effective integrating tool that has already achieved demonstrable

success throughout the DOE complex with respect to work planning and other site-specific applications. As such, it will play a vital role within DOE's Integrated Safety Management (ISM) initiative. For that reason it is important that steps be taken immediately to ensure the viability of EWP at participating sites so that it will become an effective and useful tool of ISMS.

The Committee is therefore requesting that each of the participating sites take the necessary actions to have these twelve elements in place by the end of FY 98. EH-53 will follow up with each of the sites throughout the remainder of the fiscal year and use these elements as a gage to track implementation progress.

Essential Element 1: DOE Headquarters Support of EWP

DOE Headquarters and Field Office line management should clearly document its expectations and support of EWP to the contractor, and hold contractors accountable for its application.

- EH-53 should hold direct discussions with Field Office management to engage their trust and support.
- EH-53 needs to improve the coordination and integration of initiatives more effectively at both the Headquarters and Field Office levels.
- Field Offices should develop, issue, and promulgate EWP policy and procedures.

Essential Element 2: Site Senior Management Buy-in to EWP

Senior management as well as middle management should commit to and support the development and application of the EWP process and its principles. This commitment includes providing adequate resources for EWP, holding the line organization responsible for EWP performance, and approving EWP documentation.

- Brief senior management on EWP, its potential application areas, and real successes achieved throughout the DOE complex.
- Request senior management support, preferably in the form of a memorandum or other internal directive, that communicates senior management support to the line organization and site workers.

Essential Element 3: Line Management Ownership of EWP

Line management should own, be accountable for, and hold subordinates accountable for EWP performance.

- Brief managers on EWP, its potential application areas, and real successes achieved at their site and at other sites.
- Incorporate EWP objective(s) into the line managers' performance evaluation process.
- Establish an incentive for EWP in the DOE site contract.
- Establish performance indicators as a means to track progress and hold line management accountable for EWP progress.

Essential Element 4: Adequate Number of Resources Committed to EWP

Senior management should commit to an adequate level of resources to support the continuation of EWP. The commitment level is dependent on site-specific needs.

- Establish a recognized focal point for program leadership making it a full-time appointment, wherever possible.
- Seek EWP successes, e.g., return on investment, from other sites through site and EH-53 contacts and use this information as a tool with senior management to obtain their support for adequate resource levels.

Essential Element 5: Site EWP Process Formalized

Documentation necessary to describe how EWP principles or processes are implemented should be in place to describe how business is to be carried out thus, sustaining it regardless of organizational and personnel changes. Such documentation may include charters, policies, goals/objectives, procedures, implementation plans, training plans, and/or validated successes.

- Obtain senior management commitment to and approval of documentation that formalizes the sites' EWP processes and that serves as a basis for validating EWP effectiveness.

Essential Element 6: Worker Involvement

Mechanisms for incorporating worker involvement and input to the design and implementation of EWP processes should lead, ultimately, to cultural change and sustainability of EWP.

- Solicit management support for EWP and request that their commitment to EWP be communicated to subcontractor organizations.
- Obtain information from other sites where management/worker trust has been successfully addressed, e.g., Leadership Development Program at Hanford and the Post Job Review and Manager Walk About Program at Idaho.
- Incorporate improved management/worker relationships into the supervisory performance process using trust building exercises and other behavioral change approaches.
- Develop, publish, and make visible EWP-related performance indicators that the workers can directly affect.
- Involve union participation in EWP processes, wherever possible.
- Provide training for supervisors and managers related to effective utilization of worker input.
- Remain focused on the EWP principles and process and its results rather than to the “flavor of the month” initiatives that come to contractors.

Essential Element 7: Formalized EWP Training

A formal EWP training program is necessary for the consistent implementation of EWP processes. The training should extend to line management, supervision, workers, and the trainers themselves.

- Develop an EWP training plan for management, EWP process facilitators, team members, and trainers, as needed.
- Obtain line management approval of the training plan.
- Integrate site-specific EWP training into EWP complex-wide training. Prepare training materials and conduct training.
- EH-53 should issue a brochure offering orientation training by EWP team leaders to interested sites to assist in implementation and to provide consistency to EWP training across the DOE complex.
- Integrate EWP training with ISM training, where possible.

Essential Element 8: Performance Indicators in Place and Used by Management

EWP performance indicators are management tools that can be used and analyzed to track progress, highlight successes, justify resource allocation, and communicate to workers their contributions to overall site successes.

- Develop performance indicators for the site using assistance from EH-53, when needed, and tie to ISM performance indicators.
- Obtain senior and line management approval of performance indicators.
- As appropriate, involve workers in developing and utilizing performance indicators.
- Establish a means for obtaining data to support performance indicators.
- Publish and distribute performance results on a regular basis.
- Establish procedures for analyzing performance indicators for trends and continuous improvement.

Essential Element 9: Communication Mechanisms for EWP in Place

Various methods should be in place to communicate, both internally and externally, information regarding EWP and the successes achieved through EWP. Such methods can be used to clarify the principles of EWP, improve the level and trust within an organization using EWP, and describe the positive results of EWP.

- Develop an EWP communications plan to reach workers, line management, DOE, and other sites for the purpose of communicating EWP applications, cost savings/avoidances, and improvements in the margin of safety at sites.
- Obtain senior management support and approval of the communications plan.
- Implement the communications plan.
- EH-53 should take the lead to update the EWP Homepage as still another communication mechanism.

Essential Element 10: Feedback, Evaluation, and Continuous Improvement Mechanisms in Place

Mechanisms should be in place for management to obtain feedback on the effectiveness of EWP processes, evaluate the results, and provide information to improve the margin of safety or efficiencies in work planning and execution as part of continuous improvement.

- Establish methods of feedback to management of EWP results and successes, including communicating to management the benefits of EWP as a process for continuous improvement.
- Obtain line management support and designate a point of contact within the line organization to receive and evaluate feedback information.
-

Essential Element 11: Integration of EWP with Other Initiatives

EWP is an excellent tool for integrating other initiatives into a single, focused initiative that can result in more effective use of resources, e.g., VPP and self-assessment into ISM.

- DOE should examine ways to integrate various program initiatives into ISM at the Headquarters level.
- Working with the ISM point of contact, EH-53 should develop the infrastructure supporting ISM/EWP integration and implementation in the field.
- EH-53 should obtain an endorsement of EWP as an integrating tool for ISM at the task level by the DOE ISM Manager and communicate that endorsement to DOE field and contractor management organizations.
- Establish a clear definition of how EWP fits with ISM and modify corresponding steering committee charters accordingly.
- EH-53 should take the initiative at Headquarters to identify how EWP and other initiatives can be integrated.
- EH-53 should provide EWP presentations at future ISM meetings on ISM/EWP integration.

Essential Element 12: EWP Results and Successes Documented

EWP results and successes should be documented to assist in initiating and extending EWP processes, as well as providing a basis for justification of resources and promoting continuous improvement.

- Designate the National EWP Steering Committee as the official repository for validated EWP results from all sites. and make that a topic of the next monthly EWP conference call.
- Sites document and, wherever possible, quantify their successes and results on a quarterly basis. Submit to Headquarters.

ENHANCED WORK PLANNING PROJECTS SITE ANALYSES

Fourth Quarter -- Calendar Year 1997

Brookhaven National Laboratory (BNL) Site Analysis: After initiating EWP activities in the third quarter, Brookhaven has been active in the fourth quarter in applying EWP principles to their work planning and control issues that were identified in the April 1997 ISM Evaluation Report. BNL recognized the value of using the experience and expertise of the EH mentor and the lessons learned at other sites by the EWP process on work control systems. The primary EWP work has been done with the BNL Work Control Committee assigned to correct the ISM findings. A review of the work control systems used at several DOE sites was presented to the committee along with the EWP principles that were key to the systems. The progress with the committee was slow due to reluctance of several departments to change their systems and trying to resolve the findings through minor modifications to their systems that were made without the required formality. After much give and take, the committee arrived at a Work Planning and Control Policy draft at the end of December that included the principles of EWP but still gave the departments some latitude in the application. A pilot demonstration project is planned with the Light Source Department to start in February to put the new system into reality and to get some lessons learned before going plant wide.

The continuation of EWP at BNL is uncertain due to the new contractor, BSA, coming on board to start transition in January. The new contractor will need to determine whether they want to continue the work planning assistance and to apply the EWP process for enhancing additional program areas.

Fernald Environmental Management Project Site Analysis: During the fourth quarter of calendar year 1997, the Fluor Daniel Fernald EWP Program has demonstrated that increasing employee involvement in the work management process results in a reduction in backlogged work, improved field responsiveness, fewer delays, and improved customer satisfaction while improving worker safety and productivity. The EWP program is being implemented across the facility by completing activities identified in the Site Enhanced Work Planning Implementation Plan.

The Fernald EWP Program continues to make significant progress in achieving its goal of site-wide implementation. The growth of the EWP program is currently at 81 percent of Fernald's targeted employee population. EWP efforts include active initiatives in all of the major project areas at the Fernald facility and in the project support administrative organization.

During this period, the Waste Management Task Order Core Team completed and transferred administrative control of the enhancements to the functional area manager. At the time of turnover, this project area has realized a 50 percent reduction in man-hours required to plan and approve task orders, and a 90 percent increase in the task orders reviewed and approved by support organizations. The result has been the elimination of work delays in the work planning stages and a 50 percent improvement in the number of task orders that are prepared and ready for execution. The overall benefit has been a 50 percent increase in work activities performed in this area.

As a direct result of the EWP program at Fernald, several productivity improvements have been realized in other areas where EWP is engaged. Examples of these improvements include an 83 percent improvement in acceptable work packages generated by the landlord services organization, a 70 percent reduction in the amount of work requiring detailed planning by property disposition, and a 50 percent reduction in time required to disposition excess property at Fernald.

Heightened worker awareness about job hazards and improved worker knowledge of work requirements and the workplace environment has contributed to the site's 800,000 plus safe work hours for this reporting period.

As a direct result of senior management commitment to the EWP program and the principles of EWP, all new first line supervisors are now required to spend eight hours of on-the-job training in the EWP Department. The purpose of this training is to familiarize the workforce, through supervision, with the principles of EWP and identify areas for potential EWP initiatives. Senior management has commissioned an EWP brochure defining EWP and its successes for distribution to all employees.

Hanford Site Analysis: The Fluor Daniel Hanford (FDH) Project Direction office has established its ownership of the EWP program and assigned responsibility for EWP to the project Integrated Safety Management Director. The EWP elements have been incorporated into the Project Hanford Integrated Environment Safety and Health Management System (ISMS) Plan through a set of management expectations tied to procedures and, ultimately, requirements. The EWP program is being integrated into the fabric of the processes that guide work planning and safety management. With multiple contractors, facilities, and hazards, the goals of EWP within the Project Hanford Management Contract (PHMC) are to:

- institutionalize EWP elements into the PHMC work planning and safety management processes,
- implement EWP through the ISMS Plan management expectations, and
- improve EWP processes through self assessment, lessons learned, mentoring, and information sharing at the PHMC facilities and across the DOE complex.

Project Direction, PHMC facilities, and the EWP Core Team are working together to achieve these goals. EWP implementation efforts are scheduled for the ISMS priority facilities, K Basins and Tank Waste Remediation System (TWRS), and center on the ISMS activity level expectations. An employee survey is being prepared to ascertain current employee perspectives regarding worker involvement, team planning, and training adequacy (among other subjects) at all PHMC facilities. All involved parties, including union leadership, facility personnel, and Project Direction staff, are reviewing the survey questions. The Fast Flux Test Facility (FFTF) will pilot the survey, after which K Basins will conduct the survey. TWRS has conducted an EWP survey and is using the data for

continuous improvement. TWRS plans to conduct the same survey in three months to gauge any improvements and identify any existing obstacles in the process. Many site subcontractors have enhanced their work control procedures with work planning teams (worker involvement), using a graded approach, and incorporating the job hazard analysis (JHA) process.

The reorganized Hanford EWP Core Team training is at various stages due to new personnel joining the team and the various facility levels of EWP implementation. Facility baselining is continuing, and training will be provided as each facility's needs are determined. The EWP Core Team will assist the various PHMC facilities in identifying an EWP implementation schedule by analyzing facility needs and priority status. Some non-priority subcontractors are beginning to reap the benefits of EWP and, in doing so, are better prepared to demonstrate ISMS compliance.

Idaho National Engineering and Environmental Laboratory (INEEL) Site Analysis: Idaho has been making significant progress toward meeting the milestone of implementing a standardized work control process by April 30, 1998. This new, standardized system is a culmination of work performed by eight EWP multi-disciplinary teams with personnel representing all facilities and focusing on developing a common approach to identifying, planning, controlling, and executing work in a safe, consistent, and efficient manner. The EWP team leaders and LMITCO senior management are confident that the process and products produced by this EWP initiative are a significant step in achieving safety and efficiency through standardization.

INEEL's work control procedure has been modified to incorporate the team's enhancements and to standardize and simplify practices. The elements of the revised work control system include a process with identical work control forms; common terminology, roles, and responsibilities for work control participants; an identical computerized maintenance management system; one-site priority rating system; a common hazard identification tool; and a pilot for standardized hazard mitigation practices. Major changes include clearly defining roles and responsibilities for the primary owner for each work order, clarifying minor maintenance and use of the skill of the crafts, improving the engineering interface in maintenance work control, and ensuring that the rigor of job planning and oversight is based on the risks and complexity of proposed work. Ongoing efforts will focus on maintenance optimization, enhancing use of performance indicators to monitor the effectiveness of the work control system, and encouraging worker involvement in identifying process improvements.

LMITCO's training board, chaired by the executive vice president, recently approved a well-designed process implementation plan. This plan consists of three levels of training. Level 1 training is a brochure providing an awareness of the EWP process, the goals and accomplishments of the teams, and the facility point of contacts for implementation support and continuous improvement. This brochure will be delivered to all LMITCO employees. Level 2 training will communicate those work control enhancements to the INEEL workforce involved in this process (approximately 1,500 employees). This training, which will be delivered through an INEEL-produced, 15-minute video, will enhance the ability of personnel involved with the formal work control process to interact with and effectively support the new process. Finally, Level 3 training will be conducted in a three-hour classroom environment. This training will assist responsible personnel to apply the procedures and tools of the standardized work control process to plan and execute work properly. The information

presented in this training will increase the participants understanding and ability to apply the standardized INEEL Maintenance Work Control process to complete work safely and efficiently.

After this new system is implemented in April, the site-wide EWP team will be augmented by facility-specific teams to further educate affected employees and enhance the new standardized work control process.

Los Alamos National Laboratory (LANL) Site Analysis: LANL has been tangentially involved in the EWP process since FY 97. However, the initial attempt at implementing EWP failed when proponents were unable to obtain DOE-AL and senior contract management support. The former leader of the Work Control Re-engineering effort provided an interface with the EWP initiative, but never fully engaged in the EWP process. At the turn of the calendar year, a new work control leader was appointed who is revisiting the formalization of the EWP program. EWP would then be implemented in conjunction with LANL's ISMS as the tool to implement ISM at the task level. In order for this approach to be successful, DOE-AL buy-in and support must first be obtained. Senior contract management must then provide direction and support for full implementation.

LANL had initiated a Work Control Re-engineering program prior to EWP. The Work Control Re-engineering effort has resulted in several institutional requirements documents including Facility Maintenance Work Control, Hazard Analysis and Control for Facility Work, Maintenance Skill of Craft, and Graded Approach for Facility Work. In addition, a formal project has been established to implement a laboratory-wide computerized maintenance management system. The project is called CMMS and the tool being implemented is PassPort.

LANL has developed an institutional work control document for work that is not facility related. It is entitled Safe Work Practices. LANL recently initiated a Skill of Craft Enhancement and Expansion Project to review the Skill of Craft Program. LANL also is assuring that institutional facility-related issues are integrated with the ISM program and has begun exploring the possibility of combining Facility Maintenance Work Control with Safe Work Practices. These projects could benefit from involvement in the EWP process and principles.

Oak Ridge Reservation Site Analysis: After gaining considerable momentum in 1997, EWP efforts at the Oak Ridge Reservation are poised to expand and realize significant benefits in 1998. With various EWP teams functioning at Y-12 and Eastern Tennessee Technology Park (ETTP) (and new teams in the process of being formed at ORNL and Portsmouth), EWP has become clearly acknowledged as a mechanism for advancing many site goals including those associated with implementing an Integrated Safety Management System, following through on fatality response commitments, and supporting the sites in their efforts to obtain VPP status. Particularly among contractors presently involved in EWP (LMES, LMER, MK-Ferguson, BNFL, East Tennessee Mechanical Contractors), the initiative is viewed as a successful, albeit fledgling, program, with much promise but in need of consistent support. Pro-active site DOE support, somewhat lacking in the early part of 1997, is beginning to occur with two DOE-ORO representatives participating on the reservation-wide EWP Steering Committee (one of whom is a co-chair of the committee).

At ETTP (formerly K-25 Site), a dramatically enhanced site-wide work control process has been developed and is currently being piloted within several organizations. Senior contractor management at ETTP (LMES) has embraced EWP and expressed interest in initiating activities throughout Environmental Management Enrichment Facilities (EMEF), including those at Portsmouth and Paducah. Also, BNFL, the contractor recently awarded a contract to D&D three ETTP facilities, has adopted a tailored version of the EWP program and is represented on the OR Steering Committee. However, the management of the EMEF program has changed as a result of a new, \$2.5 billion M&I contract awarded to Bechtel Jacobs in December 1997. Efforts are underway to secure the support and involvement of the Bechtel Jacobs team as quickly as possible; preliminary commitments to participate in the EWP program have already been given by key managers. With a major transition process underway, it is anticipated that the implementation of the already developed enhanced work control processes (and the EWP efforts in general at ETTP, Portsmouth, and Paducah) will stall unless enthusiastic contractor support is fostered and consistent involvement by DOE-ORO and EH is maintained.

At Y-12, EWP efforts have been focused on improving maintenance work controls in the support of Enriched Uranium Operations. Current efforts are focused toward implementing a new integrated approach to job hazard identification and control in support of Y-12 implementation of Integrated Safety Management. As a direct result of these efforts, the Y-12 Site Procedure Y10-012, *Requesting Maintenance Services*, has been revised and issued with greater emphasis on hazard identification, customer involvement, and a method for evaluating the worker risk when performing the maintenance test.

Efforts are continuing with the Y-12 EWP team to automate the Maintenance Work Control. In support of these efforts, benchmarking is ongoing to learn from the successes of others. The automated processes at Hanford, ETTP, and Fernald have been evaluated for application to the Y-12 site.

The Y-12 EWP team continues to work with the ATLC-FMO Partnership and the Y-12 Integrated Safety Management system team in efforts to move forward with an up-front, multi-organizational approach to hazard identification and control.

The recent establishment of the Oak Ridge EWP Steering Committee promises to help expand program efforts throughout the diverse Oak Ridge environment and coordinate efforts among the various organizational groups represented. Major goals of the committee include facilitating the sharing of EWP-related lessons learned, tools and work products and providing a mechanism for the various Oak Ridge organizations to collaborate on important initiatives to enhance how work is identified, planned, approved, scheduled, and executed. Overall, it is the goal of the Steering Committee to help Oak Ridge accomplish its missions safer, faster, more efficiently, and at reduced cost.

Ohio Field Office Analysis: Until late FY97, the level of participation of Ohio Field Office sites in the EWP process varied significantly from site to site. At the National EWP Workshop in August 1997, the Ohio Field Office committed to leading an effort to achieve more consistency with respect to participation across its sites.

As part of the implementation process, the Ohio Field Office has put into place a Steering Committee Charter that was approved by the Ohio Field Office manager. Along with the Charter, the Ohio Field Office Policy for Safety Management was revised to incorporate EWP, an implementation plan was drafted to provide more consistent application of EWP across participating Ohio sites, and performance measures/indicators were developed for measuring EWP process implementation. By taking this approach, a framework is now in place that provides direction and a set of expectations for use by the participating sites. This approach allows for more consistency in EWP process implementation while, at the same time, it permits flexibility to meet site-specific needs.

At the **Fernald Facility**, EWP is a fully funded department-level organization with a charter to implement EWP site-wide. Currently, the EWP program is being implemented across the site into all elements of work management activities. EWP activities are being implemented in accordance with the Site Enhanced Work Planning Implementation Plan (PL-3059) and are on schedule with the Site Prioritization Document. Currently, Fernald has a site-wide approach to work management and nine active core teams. The current focus of the EWP program includes work management programs in the areas of waste program management, property disposition, landlord services, and construction management. One of the areas recently initiated was the work management programs associated with enriched and restricted material management. Fluor Daniel Fernald senior management is fully committed to total worker involvement, line management support, and application of ISM in achieving site-wide implementation of EWP.

The **Mound Plant** had an active and successful EWP program during 1995 and 1996 in its maintenance and waste management programs. They were working toward site-wide implementation. However, during the first quarter of FY98, the Mound operation underwent transition from EG&G Mound Applied Technologies to Babcock & Wilcox. During that time, organizational roles were clarified and a Babcock & Wilcox representative named to the Ohio Field Office Steering Committee. Babcock & Wilcox intends to maintain EWP processes through its ISM approach that is incorporated into all of its site-wide projects.

West Valley is implementing the EWP process at that site and is represented on the Ohio Field Office Steering Committee. Many EWP principles are already being employed in work management systems. West Valley has recently completed a new EWP Implementation Plan to bring all initiatives under a new structured system. This system is being implemented for various re-engineering activities across the site.

Presently, the two smaller sites at Columbus and Ashtabula are not participating in the EWP process, however, invitations to participate have been extended. The level of involvement may, in part, be limited by size of the facility and its nature of work.

The **Ohio EWP Steering Committee** will serve as the mechanism to support the consistent implementation of the EWP process within the Ohio Field Office and across its sites. The committee will also serve as the forum for the Ohio Complex to use the Fernald EWP successes for application at other Ohio sites. In addition, the Ohio committee chairman and the Fernald representative to that Committee are also active members on the National EWP Steering Committee, thus providing a

communications link between National and Field Office initiatives. The Ohio Field Office has also offered to host one of the National EWP Steering Committee meetings early in CY98.

Pantex Site Analysis: Pantex has been involved in the EWP process since January 1996. The EWP effort at Pantex began under the sponsorship of the ES&H organization, primarily Industrial Hygiene, with a high level of support from plant maintenance. Pantex started implementing EWP principles using the Railcar Reconfiguration Project as a pilot project. Building on the success of the pilot, the plant maintenance organization began using EWP principles for other projects. The largest of these involved five separate teams working to reduce maintenance-related down time in building 12-84. Pantex has identified over \$1 million in cost avoidances and additional revenues directly attributable to this effort. Additionally, maintenance-related facility down time has been reduced by 50 percent.

Other maintenance EWP teams are currently working to improve work planning processes and the lockout/tagout program by facilitating the use of skill-of-the-craft in place of paperwork as a means of improving maintenance safety and efficiency. Over 75 percent of balance-of-plant work will be handled under a streamlined work control system that has been named the "Go-Do" process. These high visibility projects have served to increase awareness and participation in EWP by Pantex and DOE management. These successes have led to interest in EWP from other organizations outside maintenance. Both the security organization and the waste management organization have established EWP teams to address specific needs.

EWP is now formally recognized as an important employee empowerment tool as documented in the Pantex ISM Plan. Pantex uses the EWP training video developed by the DOE EWP Steering Committee as its primary tool for team member training.

Rocky Flats Environmental Technology Site (RFETS) Site Analysis: The Rocky Flats site was late in getting involved in the EWP process; however, it has quickly come up to speed through the use of lessons learned, tools, and processes developed at other mature EWP sites. Since the Rocky Flats site is managed by an integrating contractor, many challenges have been faced in working with the integrator and the subcontractors doing the work at the facilities. They are currently working up and down the chain of command of the Rocky Flats Field Office, the integrating contractor and all major subcontractors to achieve the necessary communication, commitment, and support. A RFETS EWP Steering Committee, consisting of senior line management executives from the IMC and the major subcontractors, has been formed and is now actively directing the technical mission of the EWP program. The goal of the EWP program at Rocky Flats is to drive toward site-wide application of a consistent work management process that involves all major subcontractors.

The original EWP Core Team has completed its mission in revising the IWCP to include worker involvement beginning at the earliest phases of planning, a team based approach to planning, and the performance of a JHA to become more integrated with the ISMS functions. The IWCP revision mandates that the maintenance crafts be involved with the upfront planning walkdowns and JHA. The planner performs an initial hazard assessment to determine the team structure, and then forms a team to walkdown, and plan the job. A JHA checklist is included with this revision to identify the hazards and establish the control measures while triggering any checklists, permits, or training

requirements needed for the job. This revision was just recently approved by the site's change control process, and the actual effects of the change have not yet been realized. This core team was used to seed four new EWP core teams to focus more on the future mission of the site.

These four EWP core teams have been formed to enhance the site's work control processes. Each of these teams has a specific mission, while simultaneously trying to accomplish the same objective--streamlining the IWCP. These teams are focusing on three main work control processes: maintenance work control, operations work control, and construction/D&D work control. A fourth core team is developing the automated work planning and JHA tool. The teams play a major role in developing and implementing work process improvements. A new screening process will also be developed to expedite categorizing the work and developing the appropriate level of work instructions commensurate with the risks and hazards. Scope and schedule of each of these teams is being developed. All of these teams have recently been trained using the national EWP training curriculum.

Savannah River Site Analysis: The SRS site has made significant progress in integrating and managing EWP activities on a site-wide basis. A site-wide Steering Committee has been formed and is currently actively managing the integration of the Maintenance Reengineering efforts and the WasteMin Program efforts into EWP.

The maintenance reengineering effort has been on-going at SRS since October of 1995. Several work management process improvements have been identified and implemented site-wide representing significant hard dollar cost savings. Currently, these work management process improvements are being looked at again from the EWP perspective, including a review of good practices from other sites. An initial Gap Analysis has been performed to facilitate integration of EWP elements.

The Nuclear Materials Stabilization and Storage (NMSS) Division has commenced the WasteMin EWP Work Planning drill down review starting with H-Canyon. NMSS Management has endorsed this effort. The Goal is to identify and baseline waste generation sources, and improve planning processes to reduce waste. Work Planning Enhancements will be integrated into the site-wide work planning and control processes being implemented through the Maintenance Reengineering Program.

- Designate the National EWP Steering Committee as the official repository for validated EWP results from all sites and make that a topic of the next monthly EWP conference call.

EWP Steering Committee Meeting Attendance List

Name	Site	Phone Number
Jim Barnes	RWMC/INNEL	208-526-7046
Bruce A. Breslau	DOE EH-53	301-903-7343
Lee Bryson	LMES-OR	423-574-3727
Dan Burnfield	DNFSB Staff	202-208-6587
Harold Conner	LMES-OR	423-576-0129
David M. Drury	Hanford-EH-53 support	509-373-6801
Mike Duffy	INEEL	208-526-7335
Cynthia Eubanks	LMES-OR	423-576-7763
Bob Evans	EH-53 support	301-972-5221
Bob Everson	DOE-OH	937-865-3768
A.G. Ferekins	INEEL/RWMC	208-526-7046
Frank Fitzpatrick	Oak Ridge - EH-53 Support	-316
Gerry Griffin	FFTF/Hanford	509-372-2823
Michael Hillman	DOE-EH-53	301-903-3568
Mike Humphreys	DOE RL/Hanford	509-326-2014
Bob Jones	LANL	505-665-1612
Sid Kelley	LMES/Y-12	423-574-3080
Bernie Kokenge	EH-53 support	937-696-2939
Skip Maas	Pantex	806-477-5846
Gary C. Marshall	ANL-W	208-533-7666
John Martin	DOE ID	205-526-1386
Robert Maughan	INEEL	208-526-3493
Mike Montini	WSMS	
Jim Nook	LMER/ORNL	423-574-4313
Charles O'Dell	DOE EM-4	202-586-8672
Gary Reid	Rocky Flats/RFFO	303-966-5156
Al Rivers	LMES Paducah	502-441-5106
H. Wayne Rivers	LMES/Y-12	423-576-6765
John Saladyga	West Valley	716-942-4141
Jim Schildknecht	Hanford	509-373-3902
Peery Shaffer	K-25 OR-QCAW	423-241-3573
Lou Simmons	Fluor Daniel Hanford	509-373-1150
Jim Thomson	RFETS	303-966-5124
Dennis T. Trout	SRS-EH-53 support	803-652-6166
Jim Trujillo	Fernald	513-648-4419
Doug Volgenau	DNFSB(OE)	703-521-3215
George Von Nieda	Idaho - EH-53 Support	208-526-6159
Jackie Wilkinson	Savannah River	803-725-7478
Jon Yonko	BNL-EH-53 Support	516-344-7111
Linda Yost	EH-53 support	301-417-0200
Craig Zumupa	DOE FE-6	202-586-6367

Enhanced Work Planning Steering Committee Membership (February 1998)

Headquarters/Field Office	Site	Member
Headquarters EH		Michael Hillman
Headquarters EM		Charles O'Dell
Committee Secretary		Linda Yost
Oak Ridge	DOE-OR	David Queen
	Oak Ridge - K-25	Lou Tanner
	Oak Ridge - Y-12	Ray Smith
Ohio	DOE-OH	Bob Everson
	Fernald	Jim Trujillo
Richland	DOE-RL	Mike Humphry
	Hanford (FDH)	Jim Schildknecht/Doug Shoop
	Hanford (FDH)	Lou Simmons
Idaho	DOE-ID	John Martin
	INEEL	Paul Yela
	INEEL	Mike Duffy
Savannah River	DOE-SR	Yvonne Gentry
	Savannah River	Jackie Wilkinsen
Rocky Flats	DOE-RFFO	Gary Reid
	Rocky Flats	Barbara Swenson
	Rocky Flats	Steve Little/Jim Thomson
Albuquerque	DOE-AL	TBD
	Los Alamos	Bob Jones
	Pantex	Skip Maas

APPENDIX B
INTEGRATED SAFETY MANAGEMENT
BROCHURE
(Fluor Daniel)

